BOARDWATCH MAGAZINE

ELECTRONIC BBS AND ON-LINE INFORMATION SERVICES

*Bob Hartman of BinkleyTerm - Phil Becker of The Bread Board System
Building Communications Bridges*
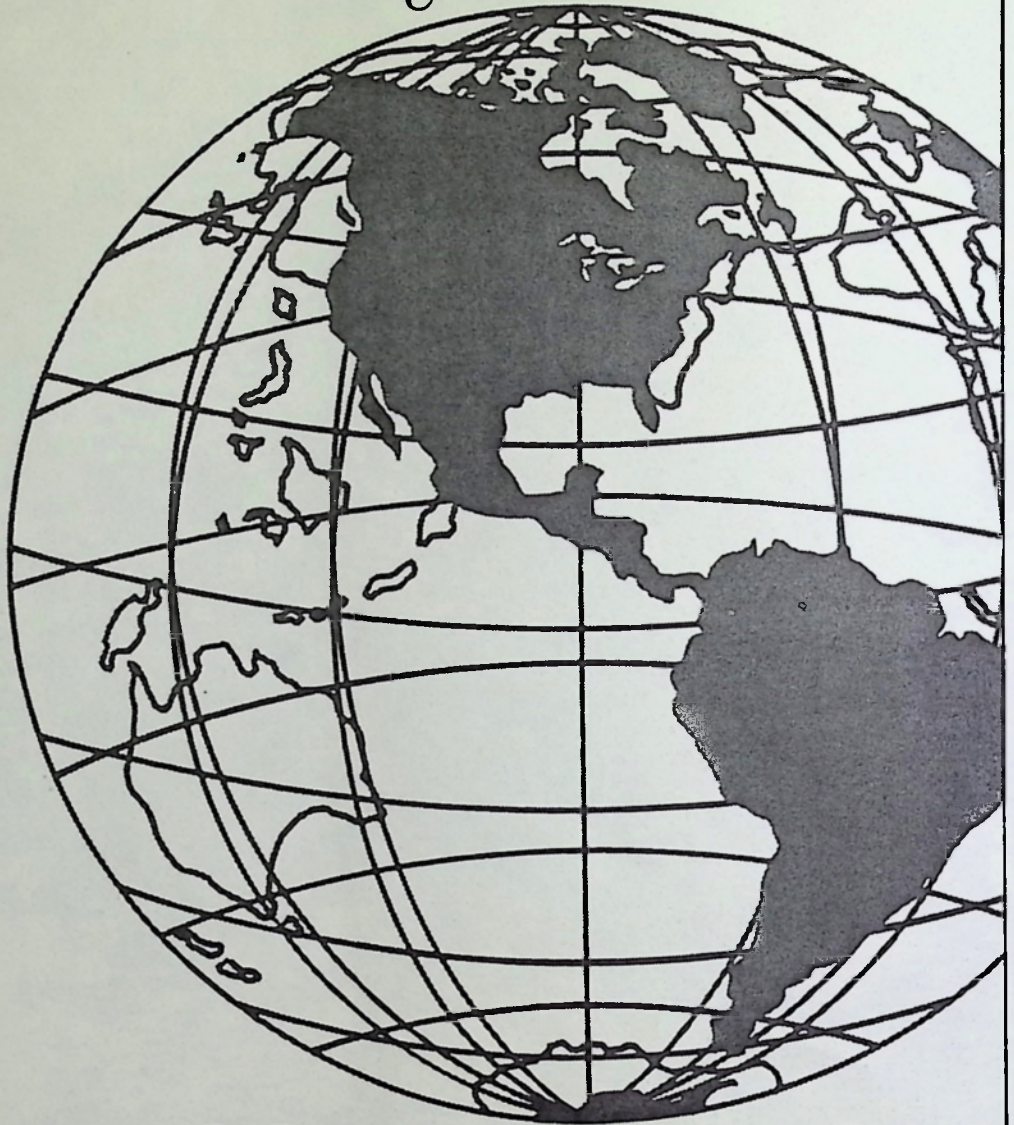
BOARDWATCH MAGAZINE

EDITOR'S NOTES

This issue, we were surprised to learn of the suddenly dramatic developments in E-Mail. It appears everyone is connecting to everything quite suddenly. Actually, it's probably the result of months or years of work toward that end but it is finally showing up. Once reticent to open their doors to other services, today's E-Mail vendors are in an interconnect frenzy.

Within a year, you will likely be able to send E-Mail from any public service to any other. Within another year, this universal interconnectivity should reach to the LAN/BBS level. And within a third, to the desktop directly - a desktop X.400 site, maybe in a little TSR pop up. These ever shortening routes will make it simpler and easier for newcomers to join the party. The more universal nature of E-Mail will make it more useful. This should snowball into an eventual melee involving 40% of the U.S. population on a daily basis by the end of the century.

The developing interest among trade show professionals in the BBS community is also encouraging. This year marks the beginning movement of the BBS/online service out of the fringe application arena onto center stage. Rather than a shaky card table in the back hall of a hotel affiliated with a major trade show, BBS vendors will be front row center at shows of their own. We look for such affairs to be the place for the lively developments and innovations in the PC industry.

An interesting corollary to BBS/online services is the evolution of the laptop computer. The laptop inherently seeks connection to the home base. Think of it as the sexual urge of laptop computers. This connection between laptops and BBS will grow stronger as both develop. Currently, every computer magazine in the country is running comparative reviews of the 60 laptop models introduced since LAST issue. Everyone is getting into the game. But the ultimate laptop isn't here yet. My wish list for the lap:

Small is good - but let's stay rational. Small isn't necessarily a virtue in screens and keyboards and that's mostly what a laptop is. I would like it under six pounds. It should fit in a well kept, but not empty briefcase.

VGA Screen. Although frankly I couldn't care less about color. How did we get off on this CGA thing for laptops? Hercules has been the monochrome standard on the desktop for years and it works fine. I could live with a Hercules-style monochrome display. The resolution is almost as good as VGA anyway. But CGA wasn't attractive to me when it was new - in '82. I don't really care if it is back lit, supertwist, blue, or what. I do want to be able to read it, as radical as that may sound.

Memory - 1 MB of RAM adequate. My DOS world still runs in 640 KB. Every time I start combining EMS and extended memory with LANs and applications, I run into problems anyway. The big RAM in laptops is to work around the kludgy disk schemes. Let's have the disks.

Disk Storage - a standard 3.5-inch floppy is important. Credit cards and two-inch floppies are cute. But they work better at the gas station than in the laptop. The tiny hard disks of a little over 2 inches by PrairieTek are already making their way into the little machines. A 100 MB unit would be nice but anything over 40 MB will do.

Cellular Telephone/Modem/Fax. ITC in Texas has the right idea if the wrong weight and price. They've marketed a laptop with cellular phone and modem in it for two years. The problem? Originally it was $7200 and even now it's over $5000. Oh, and I think it weighs about 240 pounds. Let's put cellular telephone and a 14.4 kbps V32bis modem AND FAX function IN the laptop. I want to dial from the keyboard and talk to someone by shouting into the handle (or something), or dial from the keyboard and get a data connection to my BBS or MCI Mail, or send a quick note to a fax machine. Motorola already has a VLSI chip set for cellular and a pocket telephone that's mostly keypad, speaker, and microphone. The thing folds up and slips into a shirt pocket (almost) for $3000. As they sell a few of these the chip costs should come down.

We don't need a keypad since we have a keyboard. The speaker may be a bit of a problem since we want this laptop to basically act as a portable speakerphone. Cellular telephone and laptops are like bacon and eggs. Neither will ever be complete without the other. Everything predating this standard configuration is practice drill.

Optional Display Port. Laptops are often used for the traveling dog and pony show. For conferences and symposiums, you set up a big projection screen monitor and let all the guest speakers bring their laptops to the podium, preloaded with their software and presentation, and plug them into the big screen so we can all see. Toshiba's decision to drop this display port on their SE models was stupid with a capital S. But everyone is so ga-ga over the new machine no one seems to have noticed.

Battery. The ones we have don't jump the hoop. Let's hope the new lithium technology gives us 8 hours WITH the cellular and modem cooking. They should be replaceable and offer an external charger. You should also be able to plug the laptop into an AC outlet using the usual brick power supply.

Price - $1200. I know. I've lost my mind. Cellular, 40 MB, VGA, 14.4 kbps modem, fax, in six pounds. I may have to wait a bit longer. But the number of vendors getting into the game should make it pretty competitive and it's just a matter of time. Anyone want to buy a 4.77 MHz PC with 128 KB of RAM and a single 160 KB full-height floppy for $3300?

A MILLION TINY LENSES

Richard Saul Wurman authored an excellent 1989 book titled Information Anxiety. The primary theme of the book revolves around the vague feeling of unease we experience when the available information on a subject greatly exceeds what we feel we should know about it.

And the available information is exceeding all of us. The number of periodical publications in print is astounding and still growing exponentially. And print publications are not alone. Television is no longer three channels with two of them offering ghostly pictures of

The Beaver. It's now 60 channels by cable and hundreds by satellite, and you can still only watch one at a time. Even the printed satellite programming directories and guides (yes there are such things) become too large to deal with effectively.

Advertisers and marketeers, who once had your relatively undivided attention via the daily newspaper, three television networks, and a handful of very high circulation national magazines, now find it nearly impossible to cut through the "clutter" at any price or by any means. The tv commercials grow more pricelessly bizarre each season and have branched into the once sacrosanct domain of movie theaters and videotape cassette rentals. Targeted direct mail is growing in such proportions that it can hardly be delivered. Junk mail may be our next alternative energy source.

This has given rise to hundreds of increasingly specialized publications much like Boardwatch. The general news periodicals have all suffered declining readership over the past few years and the trend in print publishing has been radically toward ever more specialized publications. Even television is now segmented into news channels, sports channels, comedy channels, sex channels, and my personal favorite, animal-sex-and-violence-on-the-Serengheti plain channels. I could watch those Springbok mate for hours and those ever faithful, hard working ants that carve up trees and carry them home a little slice at a time in a steady marching line very nearly bring tears.

This trend toward specialization offers consumers more digestible segments of information on subjects of interest. It offers advertisers a more attentive, albeit smaller, audience better targeted to their products. And it offers creators, producers, writers, and publishers reasonably manageable topical areas of information they can cover somewhat knowledgeably by specializing themselves. Since all but the truly enormous few entrenched network and publishing giants win in this scenario, we can look for it to not only continue, but accelerate.

The dark side of all this is that not all information, specialized or not, is genuine. Many companies are virtually be-

coming publishers themselves in an attempt to tout their products. It can be extremely difficult to discern if the magazine you're holding in your hand right now is published by independent, knowledgeable journalists or clandestinely cranked out by a marketeer in a thinly veiled attempt to promote their offerings. The more "independent" they can make it look, the more effective it is. Fortunately, few are at all good at it. Still, marketing hype swells the available cloud of information to ridiculous proportions.

We recently learned of a very alarming written report by a "leading academic authority" regarding the future growth of the virus program problem among personal computer users. It issued extraordinarily dire predictions of our coming fate at the hands of software vandals.

We thought this odd with the repeated virus stories gone bust - much hyped stories of viruses due to "explode" on coming dates that actually came to nothing. The Columbus day virus of last autumn springs immediately to mind. The National Institute of Science and Technology actually had hotlines setup to handle the thousands of panic calls they expected Columbus day. No one called.

The author of this report was touted as a respected academic well qualified to comment on such matters. As it turns out, he is also a principle in a company that sells an anti-virus protection program. Nowhere in the very high-tone academic sounding paper is this mentioned. And the general press jumped all over the story. In short, it isn't information at all. It's a scam at worst and even at best it is blatantly dishonest marketing.

Since software virus programs may indeed be a problem, at the very least in isolated instances, it would help if there was some central focal point where the concerned could obtain reliable information. Unfortunately, the self-styled experts in this field almost without exception have a commercial tie to a "solution" available at a nominal fee.

Sadly, even some independent publishers, unable to marshal the expertise to discern the pearls from the swine in
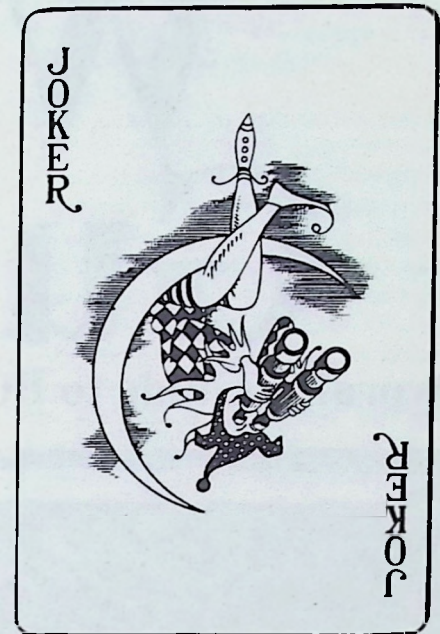
increasingly technical areas, simply publish page after page of press releases in the hope that at least some of it is true.

In this avalanche of legitimate, fraudulent, or simply mistaken information it becomes increasingly difficult to remain "up" on any subject. The hurricane of paper, tv, and radio information grows daily and geometrically. I look across the room at literally a small mountain, three-feet high and eight-feet across, of magazines, trade journals, newspapers, and books - most at least vaguely dealing with communications media and information. From this mountain, a scant handful of stories will be worth chasing down, getting the address, and telephone contact data, and writing up for your view here in Boardwatch effectively summarizing on a few pages data extracted from the blizzard of "information" available.

And I'm hardly alone facing this waterfall of paper. Doctors are deluged with piles of published study results, health care magazines, and medical journals. Lawyers can't lawyer as fast as lawmakers and courts can churn out laws and case precedent. Analysts can't analyze fast enough, teachers never learned to read fast enough. Tax accountants can't account for all the jots and tittles in the US tax code. In almost every profession or hobby our reach has exceeded our grasp. We all know more about everything than we understand and we know but a fraction of what is

knowable. If we are momentarily distracted from our reading by doing a bit of what makes us a living in the first place, we've fallen behind.

This is not a peculiarly twentieth century problem. Through history there have been a number of periods of information overload. Fortunately, someone would find a technological solution that offered a respite for a century or two. Writing, library collections, leaf-style bookbinding, printing, movable type printing, lithography, photography, and more recently typewriters and photocopiers have all stemmed the tide briefly.

History does provide us with another lesson. Try to recall a similar situation in the past where a large corporate or governmental entity has taken the lead in effecting a solution. It is odd so many would look to such agencies now for salvation. Their normal role is to hamper and usually to initially outlaw such solutions. It is not until a few years after wide public acceptance that it becomes their idea in the first place. Individuals have always provided the necessary inventions to get us through another century.

Once spurned as the province of hackers and basement experimentalists, as I understand it, the development of the personal computer is now commonly known to have been the idea of academics, large corporations, and governmental departments all along. And the original inventors are dismissed as cranks and security problems.

Likewise, networking personal computer online services by telephone modem, performed under the stern but confounded disapproval of the telephone companies, has been a nightly event since the very early days of the last decade. I'm pleased to see the X.400 standard established for E-Mail. Ten years "after", corporate America is learning how to be a Fidonet or UUCP system operator. Which brings us, in a very roundabout fashion, to the connection with BBS and personal computer technologies.

Before us spans a future with suddenly enormous challenges in information management. Some estimate that the body of what is known in total is dou-

bling every six years. But the currently emerging technologies allow individuals and small groups for the first time to electronically organize and "publish" information globally on exceedingly specific topics with cost and time efficiencies beyond any seen before. And the economics are such that you can very cheaply publish very specific information for an initially small group of interested parties - available from an unlimited market of millions who can easily access it if they so desire.

With this comes a new class of information "farmer" - those who grow information as a crop. I envision a million of these infofarmers, each collecting, quantifying, collating, and experimenting with different presentations of information on selected topics - each topic specific enough to be comprehensively manageable by an individual or small group. The medium for storage and access is of course the personal computer and data connections to it - the papyrus of our age.

These information workers will not, as once envisioned, be the worker bees tending the one massive centrally located computer monolith. They will be part of something much bigger - a global network of entirely independent cottage industry information specialists, each able to call to your screen usable information on their specialty topic area of expertise - bee keeping, reptiles, golf statistics, lawn care, political campaign buttons, wood carving, bungey jumping, skydiving, sailing, tensile strength of metals, toxicity of materials, integrated circuit data and applications, or electrical wiring codes.

As a particular service becomes known for its specialty, those interested in that particular mien will gather to it and not only consume information but contribute to it. The service will become a focusing lens for information on the subject. A million lenses, a million points of light, bringing rational, accessible order out of the chaotic cloud of information.

The electronic media will free us from the definition of publishing forced by the unidirectional aspect of conventional radio, tv, and print. There will be any number of electronic services serv-

ing as social clubs, debate and brainstorming forums for specific topics, and yes, entertainment and games.

There are a million possibilities and it will take a million systems to cover them - perhaps many more. Like writing a book, the scope of the project is so incomprehensible no one in their right mind would start one. But if you write it one page at a time, after a certain period, the book is completed. The incomprehensible scope of current information will likewise be ordered - one page at a time. It will involve millions of pages. But it will be done. This then is the new invention that will help us deal with information for the next century.

Through this technology, "experts" in any field can become available to millions through online published articles and databases, rather than the handful of people they can deal with on ordinary human terms.

For the individual, the unending cloud of free "noise" information will become largely useless - perhaps it already has. Access to usable, organized information will have its price. On the other hand, individuals will be able to access the information they need with a speed and utility only imagined today. Once they know who has it, it is but a telephone call away to obtain it and cogently and quickly extract the kernel needed this afternoon.

Advertisers will eventually find this medium inherently and incredibly attractive. As individuals cluster to services serving their special interest, occupation, or hobby, the marketeers will at last have an orderly medium to reach their also increasingly narrow target audience. Perhaps the hysterical hype of today's marketplace will be replaced by a kinder, gentler, salesman.

Many of these information services will be started and operated by the government and large corporate entities, as well as individuals. And many that start out as in individual cottage effort and are particularly sharp in fencing off an information area with a lot of potential interest, will grow to be large companies and corporations. But to a greater degree than most enterprises, at least for now, the barriers to entry are low - com-

parable to radio in the twenties. And success depends almost entirely on how well they intercept, gather, collate, and extract information from the "cloud" and present it to their customers. With very low startup costs, large economic bonuses for efficiency and innovation, and little in the way of geographic restrictions, it is a natural for the small-time "infopreneur."

I am regularly accosted with almost accusing questions regarding my interest, nay fascination with, the disorganized, poverty stricken, and much maligned BBS community. Few systems currently make the big bucks and most struggle to cover telephone line charges - even at residential rates. It's commonly perceived as being rife with hackers, computer-nerds, sexual perverts, social misfits, and other online ne'er-do-wells including the most damning label of all - the "hobbyist." (Sneer slightly when pronouncing the last.) The current book on it is that with a few exceptions, there is no "money in it."

Even the term "BBS" has fallen into serious disfavor, with most vendors curiously anxious to assure you they are not really a BBS software developer. The search for a meaningless oxymoron covering essentially the same ground is both current and intense. I personally favor "Electronic Publishing System" if it must be changed to suit the palates of the squeamish.

The recurrent accusation is along the lines "Why don't you apply your talents to more lucrative projects of suitable note to those who have money, power, and prestige?" The answer is that I am. They're just not quite there yet.

Jack Rickard

TELEBITS

2.88 MB 3.5-INCH FLOPPY DISK DRIVE AVAILABLE

Practical Computer Technologies, Inc. has announced a new 2.88 MB floppy disk drive. The drives use new Extra-High Density (EHD) barium ferrite 3.5-inch disks manufactured by Toshiba and

currently available at $6.50 each in quantities of ten. The new disk media is currently available and should be widely distributed this summer. Most importantly, the drive is also completely compatible with the earlier 720 KB and 1.44 MB 3.5-inch disks.

A kit to install an internal drive in an existing 5 1/4-inch bay is available for $339 and includes a controller card, cables, the drive unit, and mounting hardware along with a 4 KB device driver that allows the unit to operate transparently to DOS. According to president Ed Kay, the unit can be installed on ANY existing IBM compatible PC, XT, AT, or 386 regardless of existing floppy/hard drive controllers without reconfiguring switches etc. Just plug the card in, attach the cable, and install the 4 KB driver. The controller card supports up to two floppy drive units including 5 1/4-inch and 3.5-inch drive units.

The units use a new perpendicular recording technique to achieve the higher densities. Additionally, the unit sports a 1 MB data transfer rate making them *four times faster* than existing floppy disk systems. Rumor has it that IBM itself has been pawing the units over pretty thoroughly and may add them to the line. Practical Computer Technologies, Inc., 3972 Walnut St., Fairfax, VA 22030; (703)385-3332

BINKLEYTERM AUTHOR JOINS eSOFT INC.

The heart of the "connected" BBS network concept is a piece of software termed a "mailer" that passes packets of echomail and files from one BBS to another in the "00:dark:30" hours of night. Undoubtedly the most popular mailer used in the International Fidonet, in terms of installed base, is a program titled BinkleyTerm. Binkley is copyrighted software but freely distributed at no cost to anyone who wants to go through the installation process.

BinkleyTerm was created by three Fidonet system operators located in entirely different cities. Alan Applegate documented the program while Bob Hartman and Vince Perriello created the code.

Phil Becker of eSoft Inc. created the popular TBBS multiline BBS system. Last fall, he brought Applegate onboard to assist with product support for their rapidly growing user base. At about the same time, he engaged Hartman in a cooperative development of his pending expansion module, The Integrated Mail System (TIMS).

TIMS will offer multiline Fidonet mail capabilities for the first time, allowing incoming mail and file requests on up to 32 lines concurrently with the normal TBBS access. Manual callers won't be able to tell its there. Likewise machine-to-machine transfers will be transparent.

During the course of the TIMS project, Becker and Hartman apparently reached some level of rapport - an often difficult to achieve mental communication link between strong minded/visioned software creators. The two discovered that many of their areas of expertise were complimentary. As a result, at the end of March, Becker announced that Hartman would be joining the firm and relocating from his home in Nashua New Hampshire to the Denver area.

According to Becker, "Hartman brings eSoft expertise in an area we see as key in the development of future connectivity products."

TIMS, in conjunction with a remote laptop mailer program currently under development, will allow relatively untrained users to easily send and pickup files from a TBBS host using simple send and get commands. They won't even have to logon to the system to send and receive reports, E-Mail, and files. The laptop will make the call automatically and "fetch" correspondence in the background much after the fashion of Lotus Express or Norton Commander for MCI Mail.

We have, on several past occasions, mentioned that eSoft was based in Englewood Colorado. Actually, they are, and have always been, located in Aurora Colorado. We hope that the new TIMS product brings them the success required to relocate a few miles "uptown" to Englewood soon. Such inaccuracies in our reporting are both too common and too embarrassing for us to continue publication if they do not.

The marriage of Hartman and Becker aimed at mail software brings up some interesting possibilities. Purely by way of conjecture and rumor, we've heard of such erotica as simultaneous bi-directional file transfers at 9600 bps using the CCITT V.32 modems for advanced BinkleyTerm beta testers? If true for BinkleyTerm, since Hartman did Binkley could it be in the cards for TIMS? By uploading and downloading mail and files simultaneously, this would theoretically cut the telephone bills of about 6000 Fidonet sysops in half (if traffic was the same volume in both directions).

Some speculate on coming links to send E-Mail to facsimile machines using popular PC fax cards, fax card to fax card file transfers to/from BBS systems, and links to more LAN gateway products such as X.400 and MHS from Action Technologies. While much of this remains the wildly demented ravings of hopeful devotees, it is clear that Becker and Hartman are taking careful aim at automated connections between systems. The communications software development horsepower of this team points clearly to some exciting future announcements.

eSoft Inc., 15200 East Girard Ave., Suite 2550, Aurora, CO 80014; (303)699-6565 voice. eSoft product support bulletin board at (303)699-0153.

HAYES DROPS 150 EMPLOYEES IN COST CUTTING

Leading modem manufacturer Hayes Microcomputer Products announced some dramatic cost-cutting measures in early April, including the dismissal of 150 employees from their work force and the closing of sales offices in New York, Los Angeles, Toronto, and Washington D.C.

Hayes has admitted the measures are the result of declining revenues and increased price competition in the modem market place, and limited success in overseas markets. Hayes had enacted a smaller cut of some 60 employees last autumn.

Among the casualties was John Aitken, who had served as manager of Hayes BBS sysop support program. Randy Cooper will be assuming Mr. Aitken's responsibilities.

The company is also responding to the fierce price competition in modem hardware by announcing a $199 package for Macintosh owners, including Smartcom software and a 2400 bps Personal Modem. Hayes Microcomputer Products, Inc., 705 Westech Drive, Norcross, GA 30092; (404)449-8791

FASMATH COPROCESSOR CHIP OFFERS LOW POWER - HIGH SPEED

Cyrix Corp has announced a new math coprocessor chip for 16 and 20 MHz 80386SX-based systems. The FASMATH 83S87 uses as little as 30 milliwatts of power (quiescent) compared to Intel 80387SX chip's 700 milliwatts - which could mean as much as 45 minutes battery life in some laptop applications. The chip is pin and software compatible with the 80387SX but performs approximately **four times faster**. A multiply operation, for example, typically requires 31 clock cycles on the Intel chip. The Fasmath chip performs the same operation in 8 clock cycles. The Fasmath 83S87 is priced at $556 for the 20 MHz version. Cyrix Corporation, 1850 N. Greenville, Suite 184, Richardson, TX 75081; (214)234-8388.

VOICE DRIVEN TYPEWRITER

Dragon Systems, Inc. has developed what it terms the first general purpose voice typewriter. The **Dragon Dictate 30K** has a 30,000 word vocabulary and can be run completely hands free. The system was voice "trained" by blending a variety of voices so that it is to a large degree speaker independent. The system consists of a $9000 add-on circuit card and software package. Minimum system requirements include an 80386 PC with 8 MB of RAM.

Dragon Dictate 30K essentially acts as a front end for any word processor. Editing commands are programmed in and if the system hears a word it's not sure of, it pops up a little selection window with the likely choices. Experienced users can eventually learn to use the

system effectively enough to attain a 30 to 40 words per minute input speed. Dragon Systems Inc., 90 Bridge St., Newton, MA 02158; (617)965-5200.

NEW SHARP LAPTOP SPORTS VGA, 20 MB IN 4 POUNDS

Sharp Electronics has advanced the state of the laptop art with a new laptop model termed the PC-6220. The new model features 1 MB of RAM, a tiny 2 1/2-inch 20 MB hard disk with 25 ms access time, and a 640 X 480 pixel gray-scale VGA display. Most notably, all of this comes in a four-pound package measuring 8.5 X 11 X 1.4-inches.

The 10-inch monochrome VGA display uses triple supertwist LCD technology to deliver 16 shades of gray. The system also offers one serial and one parallel port, MS-DOS 4.1, and Traveling Software's Laplink program in ROM. The device is sparked by a 12 MHz 80286 microprocessor.

Options include a 3.5-inch floppy, numeric keypad, fax/data modem, and three-battery charger. Each battery will power the unit for up to 2 hours. While no firm price has been set, Sharp expects to list the unit for under $4000. Sharp Electronics Corp., Sharp Plaza, Mahwah, NJ 07430; (201)529-8974.

AT&T GETS INTO CREDIT CARD GAME

American Telephone and Telegraph has officially entered the credit card business. The new card is titled **Universal Card**. Actually an ordinary Master Card or Visa issued by Universal Bank, the card will also feature 10% off AT&Ts calling card telephone rates. Customers taking the card during 1990 will have annual fees waived for life. The card carries a variable annual interest rate - initially set at 18.9% and provides rental car collision damage. The card will be initially offered to AT&T's existing 22 million calling card holders.

FALL BBSDEX TRADE SHOW CONTEMPLATED

Until recently, the term BBS has been regarded very nearly as a dirty word among mainstream computer applications. Images of wan, pale adolescents

hunched over their Commodore 64 computers trying to break into some mythical national defense treasure trove of "secrets" have been so played up in the popular press that even a lot of otherwise knowledgeable wan, pale adolescents have begun to believe it. The result has been that online technology vendors have been shunted to the back of the bus at industry trade shows. If they were there at all, it was usually in some back hall of an off-site hotel.

But as more companies are discovering the joys of saving hundreds of thousands of dollars in support and communications costs through internal BBS systems, this image of PC communications is changing. And 1990 is shaping up to be the year that the online information services/PC communications industry finally comes out of the closet. Some very exciting developments are currently in the planning stages and all point toward final acceptance of PC comm technologies as the big technological frontier for the '90s.

Rich Thoma Associates has announced a Communications Products Expo trade show planned for **February 24-27, 1991** at the Town and Country Hotel in **San Diego California**. The show will feature electronic bulletin board technology from the hobbyist level through corporate communications systems and support BBS. Extensive emphasis on telco operations, Integrated Services Digital Network (ISDN) products, E-Mail services, and all phases of communications. Northern Telecom is expected to bring a working ISDN switch for various vendors to display their wares. They plan on hosting forums on home office technology, **X.400** E-Mail interconnectivity issues for LANs and BBS systems, long distance carrier and local telco issues of interest to BBS operators, BBS software technology, and information service technology in general.

Dave Hughes, online poet laureate and international online visionary, is quietly sounding out the online community regarding a **Telecomm Trappers Rendezvous** fashioned after the old time mountain trapper rendezvous of the previous century. The difference is, this one will feature global networking and online workshops. Likely locations? Cody or Jackson Hole Wyoming. This

will be virtually a Yellowstone National Park vacation with laptops around the campfire type gathering. Support among the old online hands is already flaming into a near electronic riot and by the projected **June 1991** event date, we expect this one to have shaped up into something quite different.

Peter Young of The Interface Group is probably more famous for the West Coast Computer Fair and the spring and fall **COMDEX** expositions in Atlanta and Las Vegas. The fall **COMDEX** last November drew nearly **120,000** attendees and is considered to be the largest computer trade show in the United States. According to Young, the West Coast Computer Fair is beginning to look a bit "stodgy" these days. His sources indicate that all the brains of the industry are now off doodling about with online information service concepts and BBS technology. He's planning an **autumn BBS show in Boston**. We'll call it **BBSDEX** until he announces a real title. Contact The Interface Group, 300 First Ave., Needham, MA 02194; **(617)449-6600** voice.

In researching the BBS field, Peter has developed a fairly interesting **50 item survey on BBS callers**, their backgrounds, calling habits, and show location and subject matter preferences. We've posted it on the **Boardwatch Online Information Service** at **(303)973-4222** and would appreciate participation. The questions are simple multiple choice, and it uses a voting survey file that simply tallies responses - no caller identification whatsoever. Item **4** on the main menu lists online publications. Item **7** on that menu accesses the survey. Once you have completed the questionnaire, you can dial in as often as you like and monitor the resulting tally.

All three events are still in the early stages. We'll keep you posted on developments. The fact that several groups are planning shows devoted to BBS systems seems to validate our forecasts for the past couple of years that online services and the related technologies have yet to come into their day in the sun. In the future, we would predict that the early 1990s will be regarded as the dawn of online communications. Everything to date has been just early experiments.

BOOK ON SYSOPS IN WORK

Surveying system operators and callers for that matter is a difficult task. The variety of purposes, backgrounds, and capabilities is staggering and few put together surveys with a design quite up to the replies they will receive. Inevitably, after reviewing the responses, the surveyor realizes he asked the wrong questions.

Michael Havelin operates the SKYLAND BBS at (704)254-7800. Mr. Havelin is proposing a book on the life of BBS system operators and is soliciting input from those who run a system. He has prepared a fairly lengthy **79** question survey that he would like the widest number of system operators possible to complete and return by May 15. Participants will receive a **20%** discount on the book. Havelin Communications, PO Box 8509, Asheville, NC 28814; **(704)254-6700** voice.

CELLULAR PHONES - CHEAP, PLENTIFUL, AND GROWING

Cellular telephone prices are dropping dramatically - in some areas as little as **$149** when you agree to a six month "service" contract. This should be a great boon to people on the go but more often it winds up being just a tad sleazy. The **$149** come-on usually involves another **$149** in installation costs and the cellular service can run from 35 to 75 cents per minute on both incoming and outgoing calls. The FCC really walked both sides when they opened cellular up to "competition" with precisely two carriers in each service area - normally charging almost precisely the same price for the same service. Is this some kind of bureaucratic inside joke?

Nonetheless, cellular is just booming and as the cost of the equipment falls, it's going to get even more heated. In some areas of the country the service becomes unusable during peak traffic hours. And according to Market Intelligence Research Company, it's expected to get more crowded - not less so. Projected sales of cellular should effectively quadruple from **3,173,700** new installations in **1989** to **12,381,100** in **1993**.
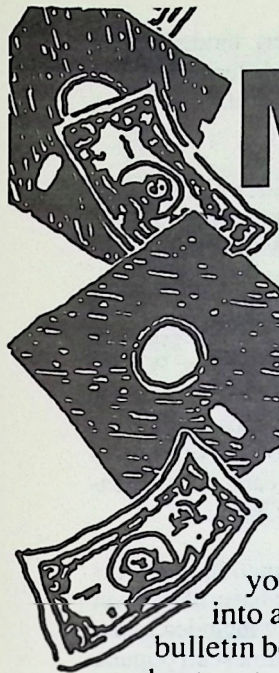
$MAKE MONEY*

YOU DON'T NEED A LOT OF MONEY

Without spending a lot of money or interrupting your present career, you can transform your personal computer into a profitable multi-line bulletin board and information host system.

These systems are being used worldwide for subscription matchmaking services, on-line catalogs, multi-user databases, and all kinds of other multiple listing applications.
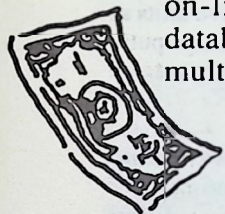
YOU DON'T NEED TO BE AT&T

Although our bulletin board software is being used by major corporations such as Popluar Mechanics, Continental Cablevision, and Ashton-Tate, they've chosen it for the same qualities that make it work for you. It's easy to operate and flexible enough to accommodate an incredibly wide range of uses.

Many of these systems are actually being run by people who operate them out of their homes while continuing to work full time.

YOU DON'T NEED TO BE A COMPUTER WHIZ

With the On-Line Store's software, you don't have to be a computer programmer to set up a fully customized paying system of your own. In fact, most of our success stories involve people *without* computer backgrounds.

CASE STUDY #1
Bruce Kamm: Metro On-Line

In less than a year, Bruce has developed a 16-line multi-user bulletin board system that provides social contact forums to paying subscribers throughout the Metropolitan New York area.

Bruce's system also has X.25 capabilities which serve as gateway to allow his subscribers access to a virtually unlimited array of other databases.

To see what's going on at the Metro On-Line, use your modem to call: 212/831-9280, (8/1/N).

CASE STUDY #2
Gary Clarkson: The Talk Channel

Gary started his bulletin board system at home while still employed full time. Soon, he was making so much money that he quit his job.

Now he has three employees and a network of affiliates that serve 34 major cities throughout the US and 8 countries worldwide via a multi-user, multi-interest bulletin board system called The Talk Channel.

To see what Gary has done with his system, use your modem to call: 818/506-0620, (8/1/N).

IF YOU NEED MORE INFORMATION. . .

You're not alone! According to the Wall Street Journal, the information service industry is growing at a staggering rate. The 1990s are fast approaching with opportunities for those with the foresight to get involved now. To learn more about how you can take your work into the future — without investing a lot of money, call: 805/650-0188, or download the demonstration version from our bulletin board: 805/650-0193 (8/1/N). Or, if you like, fill out the form below and include $10 for shipping and handling.

Demonstration disks, full documentation, case studies, a comprehensive "how to" handbook, and information about the On-Line Store's exclusive "instant business" add-on modules will be rushed to you via return mail.

*WITH YOUR PC.

For proper delivery, please complete:

Name

Address

City/State/Zip

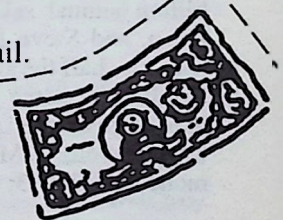Credit Card No./Exp. Date
VISA   MC   AMEX

(   )
Daytime Phone

Please make check payable to the ON-LINE STORE
Mall to: P.O. Box 3197, Ventura, CA 93003-3197

[ON LINE STORE

Your International Headquarters for BBS

CELLULAR PHONE GROWTH	
1989	3,173,700
1990	4,648,200
1991	6,641,800
1992	9,173,700
1993	12,381,100

But current plans are for a digital system that will be smaller, lighter, offer more features, and accommodate more callers than the current analog system. You may want to wait and pickup a digital system before going on the air.

MICROSOFT C 6.0 COMPILER DUE

Microsoft is set to release version 6.0 of their popular C language compiler. It includes a new environment similar to their Quick language compilers and the ability to compile DOS or OS/2 programs of nearly any size. It also is rumored to incorporate a new MAKE function borrowed from Unix. The new $495 compiler will require 8 MB of disk real estate and it is rumored that it still will not support the new C++ object oriented extensions or take advantage of the 32-bit hardware now available.

Microsoft has been doing reasonably well it would appear. The company had recently declared a two-for-one stock split to shareholders of record as of March 26. That brings the total number of shares to roughly 112 million and the value to slightly over $6 billion on $1 billion annual sales. Bill Gates, Paul Allen, and Steve Ballmer together retain over half the stock in the company. Not bad for some boys selling BASIC in baggies a dozen years ago. Microsoft Corporation, 1 Microsoft Way, Redmond, WA 98073; (206)882-8080.

NSF-NET - 45 Mbps AND CLIMBING

The future of Wide Area Networking (connecting PCs remotely) clearly includes speed as a major upgrade. Today's 9600 bps modems are NOT the final word. The National Science Foundation Network recently demonstrated applications running on its NSF-Net at

44.736 megabits per second (Mbps - million bits per second) using a T3 link between Washington D.C. and Ann Arbor Michigan supplied by MCI Communications Corp.

NSF-Net is a nationwide research network linking over 1,000 universities, businesses, and government agencies to super computer centers. The network is currently passing over 2 1/2 billion packets of data per month and is growing at an annual rate of 15%. NSF plans a 1 Gigabit (billion bit) per second network backbone by 1992.

TELEBIT GOES PUBLIC

Modem manufacturer Telebit Corporation has filed plans with the SEC to make an initial stock offering of 1.85 million shares at about $10 per share. Venture capitalists currently hold over 4 million shares in the company. The new money will be used for possible acquisitions in the data communications arena. Telebit Corp., 1345 Shorebird Way, Mountain View, CA; (415)969-3800.

TYMNET UPGRADES MODEMS

Responding to competitor Telenet's recent upgrade of 2400 and 9600 bps service sites, BT Tymnet announced plans to upgrade 200 local access numbers to 2400 bps operation between now and July 1. The upgrade brings 450 of Tymnet's 533 access numbers to 2400 bps. These 533 numbers provide local call access to more than 850 U.S. cities. Tymnet is also upgrading its 9600 bps offering from the current 18 to 69 sites. For information on which numbers received upgrades, dial any local Tymnet access number and enter INFORMATION at the LOGIN: prompt or call their customer service at (800)635-6225. BT Tymnet, 2560 N. First St., PO Box 49019, San Jose, CA 95161; (408)922-0250.

NEW PC TOOLS 6.0 INCLUDES LAPLINK, E-MAIL, FAX SUPPORT

Central Point Software has begun shipments of version 6.0 of their popular PC Tools Deluxe program. PC Tools provides a DOS shell; disk backup and maintenance utilities and a "desktop" providing a database; outliner; notepad;

appointment scheduler; modem communications; and four different calculators for algebraic, scientific, business, and programming tasks.

The new release provides communications capabilities to very easily send and receive E-Mail from MCI Mail, Western Union Easylink, and Compuserve. In addition, it includes a version of Travelling Software's laplink program to connect your laptop to your PC. Finally, PC Tools lets you quickly write up a memo and send it via fax if you have a facsimile card based on the Intel Connection Coprocessor card or SpectraFax from SpectraFax Corp.

The new database function produces dBase compatible database files. Over 30 file viewers are now included to examine data files from almost all popular word processors, database programs, and spreadsheets. A new PC-Cache program speeds hard disk operations using EMS, extended, or conventional memory. Also new is the ability to backup hard drives to tape drive units as well as floppy - including the popular Colorado Memory Systems tape drives.

The program pretty much acts as a complete environment for operating your personal computer. The DOS shell and Desktop are pop up TSR programs. The product is priced at $149 with upgrades available from previous versions at $35. The company also operates a pretty attractive multiline support BBS at (503)690-6650 using Galacticomm software. They feature live online technical support a couple of evenings per month where you can chat online with support personnel. Central Point Software, 15220 NW Greenbrier Parkway #200, Beaverton, OR 97006; (503)690-8090.

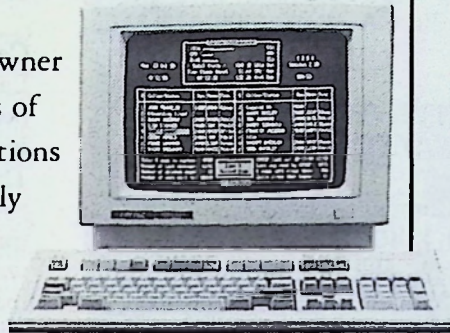## AMERICAN HERITAGE DICTIONARY SOFTWARE

Word Science Corporation is marketing a software version of the American Heritage Dictionary. The product, termed Definitions Plus, goes beyond the usual spelling checker/online thesaurus functions. It provides the complete word definition, grammatical classification, and various examples of usage for 115,000 words. Definitions Plus is a Terminate and Stay Resident (TSR)

Boardwatch Magazine -

pop up program that works with almost all word processors. Press the hot-key (definable) and it pops up over your application. Word Science Corporation, 1090 Shary Circle, Suite 200, Concord, CA 94518; (415)685-2025.

COMPUSERVE OFFERS LAN HOOKUPS

CompuServe Information Service has announced a program beginning in mid-May to link Local Area Networks (LAN) to their online information service. Essentially, the company offers interconnection to Action Technologies' Message Handling Service (MHS), a widely available LAN E-Mail package.

MHS has become a very popular E-Mail software package for a variety of LAN systems. Ostensibly there's a story behind it although we have it third hand. Apparently, the company's founder was a political prisoner in South America. While in jail, to keep from going crazy he mentally designed a complete system for the interchange of electronic mail. Once released, he formed a company and began a zealous mission to promote MHS to the world. Apparently he has enjoyed some success. The system is enjoying phenomenal growth. Though not X.400 based, it is widely recognized as an emerging E-Mail standard by virtue of the weight of the number of installations in play. Over 750,000 individuals now access MHS equipped LANs each day. MHS is included in Novell NetWare 2.11 and Novell, Inc. currently has a lock on nearly 70% of the LAN market.

The CompuServe link allows MHS E-Mail users to send E-Mail directly to CompuServe's 553,000 members and through CompuServe to MCI Mail and Internet, as well as offering the usual paper delivery and FAX options. CompuServe members will be able to respond and address messages to users on connected MHS networks as well. The administrator at each LAN site will register the location with CompuServe and will be assigned an address that can be used by other CompuServe Mail customers to send messages to that LAN. LAN users will have access to all CompuServe Mail features but will not be permitted access to the other Compu-

Serve database functions. Actual pricing for the registration and link have not been set.

CompuServe plans on implementing X.400 links to a variety of services beginning this summer.

CompuServe Information Service, 5000 Arlington Centre Blvd., PO Box 20212, Columbus, OH 43220; (614)457-8600. Action Technologies, Inc., 2200 Powell St., 11th Floor, Emeryville, CA 94608; (800)624-2162.

TOUCH UNVEILS X.400 GATEWAY FOR PC

Touch Communications has released a trio of X.400 programs they call Worldtalk 400 that promises to link Local Area Networks (LANS) to other systems using the CCITT X.400 standard.

The three programs include Worldtalk 400 Core, Worldtalk 400 Gateway Engine, and the X.400 PC LAN program.

Worldtalk 400 Core is a $5000 base program that sets up the basic gateway on a separate 80386 machine under Unix.

X.400 PC LAN is a $2000 module that sends/receives from the gateway machine to the internal LAN which must use one of the popular existing LAN E-Mail products such as cc:Mail, Inc.'s cc:Mail, CE Software's QuickMail, TOPS Inbox Plus, the Unix-to-Unix Copy Program (UUCP), Action Technologies' MHS, or Microsoft Mail.

Finally, the Worldtalk X.400 Gateway Engine is a $3000 module which converts the proprietary LAN E-Mail messages into X.400 standard messages and provides the link to other X.400 systems via X.25 packet switching networks such as Telenet or Tymnet.

The full package of software provides an X.400 gateway for $10,000 plus equipment costs. Touch Communications Inc., 250 E. Hacienda Ave., Campbell, CA 95008; (408)374-2500.

INCOMING CALLER ID MAKES PROGRESS

Central Telephone Company of Nevada has filed a proposal with the Nevada Public Utilities Commission (PUC) to provide a bevy of new services to residential customers including Caller ID, Caller ID Blocking, Redial Call, Return Call, and Call Trace. The new services will be provided at individual prices of $3 to $5 monthly per feature with discounts for packages.

Centel claims 47% of subscribers in Las Vegas have unlisted telephone numbers which makes the Caller ID Blocking a necessity if Caller ID is provided. The Call Trace feature, priced at $5 per use, allows customers to have a call traced and the telephone number forwarded to law enforcement agencies in the event of harassment calls. Caller ID will require either a separate $60 device to detect incoming caller numbers, or a Maestro Display Telephone available for a $10 monthly rental charge or for a purchase price of $140.

Bell Atlantic recently introduced Caller ID service in the Philadelphia area. The service appears to be very popular with subscribers. The company ran a TV ad they projected would produce 1500 calls daily. Instead, the response came in at over 500 calls hourly on a special 800 number. By March 3, the company had received over 65,000 calls about the service.

Meanwhile, Ohio Bell Telephone Company has filed tariffs with the Ohio PUC for Custom Local Area Signaling Services (CLASS) including Caller ID, automatic callback, and repeat dialing. The Caller ID option will be priced at $6.50 per month for the first 300 incoming numbers and 2 cents for each additional. It will initially appear in the Cleveland area.

Ohio Bell is the first telco under Ameritech to file such tariff but Illinois Bell and Indianna Bell are both expected to file before year end. Unlike Centel, the Ameritech group will NOT offer an ID blocking option. According to company spokesmen, Ameritech does not want the popularity of the service to be diminished in any way and Caller ID blocking would greatly reduce the value of the service.

Bell Telephone Company of Pennsylvania received an order from a state appeals court judge on December 29, 1989 barring the carrier from offering Caller ID temporarily until legal questions raised by the American Civil Liberties Union and the Coalition Against Domestic Violence could be settled.

FAX/MODEM SWITCHES REVISITED

Recall from our last issue that we found very little of practical value in most fax switches because they required too much action on the part of the calling party. Our solution was a device termed the Autoline Plus that switched calls based on having separate telephone numbers assigned to a single line via the Custom Ringing or Designated Ringing feature offered by many telephone companies. This service causes a distinctive ring based on which number is dialed and Autoline Plus decodes this ring to routes calls accordingly to any of three devices.

Aside from the problem of recurring monthly charges (typically $8 monthly) for the custom ringing, many areas simply don't have the service yet. We recently received an review unit of a brand new device that effectively switches between modem lines and a facsimile machine quite automatically and without any manual action by either party. It may be the ideal solution for BBS operators and the home office crowd.

VSI Telecommunications has developed a switch they term the FMX that allows you to run a facsimile machine off of one of your BBS lines without interfering with BBS operation at all except for the inherent busy signal the line will produce during an actual facsimile transmission. It does not require the participation of the telephone company and it very effectively allows you to share a single line between modem and fax.

Most fax/modem switches depend on the fact that calling facsimile machines produce an initiate tone while calling modems listen for one. One problem is that manually dialed facsimile machines may not produce the tone within the allotted time. By the time they do
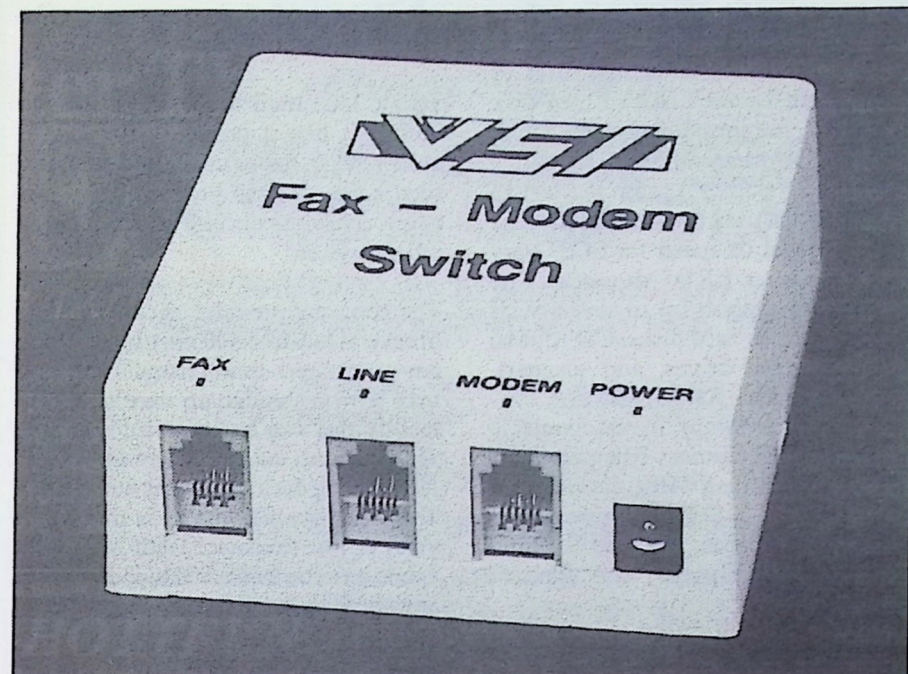
send a tone, they may already be switched to the modem and the facsimile transmission fails. To overcome this, these switches allow manual callers to manually select fax by entering a code on the touch tone keypad. But to many fax operators, the fax is a copy machine with wires. "We don't need no steenking codes mahn..." Just another opportunity for human error.

The VSI device turns this scenario around 180 degrees. The device allows the modem to answer the telephone normally with an answer tone. If the modem does not receive a modem originate tone from the other end and establish carrier within a brief period, the call is switched to the facsimile machine and the modem is allowed to hangup. To BBS callers, this will appear completely normal as the modem gets the first shot. Facsimile callers, either manual or auto dial, will not detect a difference either. The carrier detect period of 8 seconds is well within the fax training period. Voice callers will be very confused so the ideal application is to run your facsimile off an existing BBS line.

The carrier detect period is something of a bone of contention. You must change the carrier detect on the modem itself by changing the contents of the S7 register on any Hayes compatible modem. The first FMX prototypes, and

our evaluation unit were set for a five second period. Unfortunately, with the ever widening variety of modem protocols and features, the five seconds did not prove adequate for some handshakes to complete and the modem call was switched. VSI has since gone to 8 seconds - still well within the allowable fax training period.

We tested the device on one line for several days and even at five seconds had good success. There were a couple of modem callers who did not achieve the link within five seconds but with the decision to go to an 8 second detect, even they should have no difficulties. We also sent several facsimiles to ourselves using CompuServe and MCI fax delivery and all arrived flawlessly.

The FMX appears to be the ideal solution for BBS operators or callers who have a dedicated modem line but wish to add facsimile without adding lines. The VSI Model FMX is priced at $159. VSI Telecommunications, Inc., 9329 Douglas Dr., Riverside, CA 92503; (800)999-8232 voice; (714)687-2513 fax.

NEW HIGH SPEED ADAPTEC SCSI CONTROLLER

Adaptec Inc., long a manufacturer of Run-Length-Limited (RLL) hard disk controllers, has introduced a new Small Computer System Interface (SCSI - pronounced "scuzzy") controller featuring a 3 Mbps data transfer speed. This is a new level of speed for SCSI very comparable to ESDI devices. The adapter can support up to seven SCSI devices such as hard disks, CD ROMs, streaming tape drives, and scanners. The new model AHA-1522 also supports up to two floppy drives. Available to Original Equipment Manufacturers (OEM) at less than $100, the expected retail price of a SCSI interface kit is under $200. Adaptec Inc., 691 S. Milpitas Blvd., Milpitas, CA 95035; (408)945-8600.

QUOTABLES AND TRIVIAL NOTES

"What is prudence in the conduct of every private family can scarce be folly in that of a great kingdom." Adam Smith, *Wealth of Nations*, 1776

"Fanaticism consists of redoubling your effort when you have forgotten your aim." George Santayana - 1863-1952.

Poor spellers of the world, untie!

"Energy experts have announced the development of a new fuel made from human brain tissue. It's called assohol." George Carlin.

According to Daniel Mitchell of University of California at Los Angeles, during the 80's Fortune 500 firms *lost* 2 million jobs overall. Small business during the same period *added* 15 million.

MCI - SERIOUS ABOUT E-MAIL

MCI Mail has developed into one of the best all around E-Mail deals going. One of the early dedicated E-Mail services, the original product was incredibly clumsy to use and since services were not interconnected, largely useless for individual subscribers.

Today, MCI Mail has a very different look. We like it primarily because it costs nothing to use unless you actually send a message and because they have aggressively pursued interconnect with other services.

The company provides access via one of several toll-free 800 numbers. There are no connect time charges and you may browse through an excellent help facility that can be quite informative. This is almost unique. When traveling, just locating the local access number for Telenet or Tymnet to access many services can be tiresome. With MCI, you connect to the same 800 number from anywhere in the U.S. and this without any clock charges. You can create messages online, or use Norton Commander, Lotus Express, or your own word processor and script file to create them offline and upload them.

The service costs $25 annually, which they readily waive if you qualify under any of a number of criteria. This waiver is so ubiquitous we get the impression that criteria such as "if you have feet" or "if you wear clothes" seems to fill the bill. Recently, they've begun a selected promotion waiving the first $100 of the first month's E-Mail bill.

MCI actually levies charges Ala Carte style. You pay per message depending on size, or per fax, per paper delivery, etc. This funding paradigm worked for most paper postal services the world over for the past several hundred years and we're pretty comfortable with it - much more so than with clock charges.

Essentially, you can send an E-Mail message of up to 500 characters for 45 cents. The next 2000 characters are an additional 75 cents and from 2500 to 7500 characters is $1 with $1 per each 7500 characters thereafter. Actually, most E-Mail falls into the 500 character range so a message is essentially 45 cents. If you want to send a text file of 22500 characters for example, it would run you about $4.20 cents. This would be the equivalent of about 10 double spaced pages.

Fax and paper delivery are excellent options when the message has to reach the recipient without fail. MCI is particularly adept at handling this. We found their fax service to be almost immediate. A test fax to our own fax number arrived in less than three minutes. Paper mail delivery is even better. You can actually send MCI a copy of your letterhead and signature. Thereafter, all fax and paper mail sent will appear on that letterhead if you so specify. This really dresses up fax transmissions. And for paper mail, it is clearly superior to many of the other services. The message is printed out on a laser printer, complete with the scanned letterhead and signature, and mailed.

MCI MAIL RATES	
FAX	
First half-page	$0.50
Each additional half page	$0.30
PAPER MAIL	
U.S. First Class	$2.00
International Airmail	$5.50
U.S. Overnight (6 pages)	$9.00
International Overnight	$12 - $30

These charges are not insignificant. But they only apply when you actually send a message. Even better, MCI has been very aggressive in implementing the X.400 messaging standard and forging links with other carriers. Direct links with Sprintmail (formerly Telemail), CompuServe Internet, and ATTMail let you easily send messages to other services. Through ATTMail, you can even address messages to many private corporate E-Mail services.

With all these links, we would expect a bevy of "surcharges" to mail to them. On CompuServe, despite their galloping clock charges, we were also nailed $1 to respond to a message from an MCI Mail subscriber. But on MCI Mail, we were surprised to learn there are NO SURCHARGES to send mail to a connected system.

The actual user interface for addressing via X.400 is a bit daunting but doable. For example, to send a message on MCI, begin the process by entering the

recipients last name in the **TO:** field followed by **(EMS)** in parenthesis. This will call up an **EMS:** prompt.

At the **EMS:** prompt, enter the Administrative Management Domain (ADMD) of the intended service. **ATTMAIL** for AT&T's E-Mail service for example. This will then cause repeated **MBX:** prompts. At each you enter elements of an X.400 address. Elements available are designated as follows:

MCI X.400 ADDRESSING

TO: Rickard (EMS)
EMS: MCIMail
MBX: SU=Rickard
MBX: GI=Marion
MBX: IN=J
MBX: GE=Jr.
MBX: OR=Boardwatch
MBX: UN=Editorial Dept
MBX: DDA=ID=418-7112
MBX:

- **PRD**= Private Domain (i.e. PROFS)
- **SU**= Surname
- **GI** = Given Name (first name)
- **IN** = Initial
- **GE** = Generational Qualifier (i.e. Jr.)
- **OR** = Organization
- **UN** = Organizational Unit (Department)
- **DDA**= Domain Defined Attribute (usually account number or user ID on that service.

Fortunately, MCI has a number of sweetheart deals with other services allowing much easier messaging. If you are addressing a message to someone on CompuServe, for example, you don't really use X.400 syntax at all to send messages. The following series is all required to address a CompuServe Easyplex or Infoplex subscriber.

TO: Rickard (EMS)
EMS: COMPUSERVE
MBX: 71177,2310

By entering **COMPUSERVE** in the **EMS:** field, all that is required is the CompuServe account number at the next **MBX:** prompt.

This brings up a fascinating subject. What would be involved in linking your local BBS to MCI Mail?

The service does over a **Link Access Remote Gateway** account at **$100** per year. This allows you to upload and download a group of messages from different individuals in your organization through one gateway account logon. You would also pay a **$10** yearly per account fee for each individually addressable individual in your organization. In this way for example, you can make one call and deliver as many messages as you like from as many users as you like and at the same time collect a number of messages, each individually addressed to the individual user accounts on your LAN or BBS. For doable message routing and billing, this is about the minimum way to bridge to MCI en masse.

Technically, it is doable as well. Norton Commander provides a very nice interface for sending and receiving MCI mail on a schedule. It also contains a separate **MCIDRVR.COM** program and a small configuration file that actually accomplishes this. By placing this file and a single config file on your mail system, you can conceivably integrate this function into your BBS system.

The configuration file specifies the incoming and outgoing file directories. If you already run a BBS in conjuction with a mail system such as Fidonet, you would simply write a short utility to scan that outgoing area for messages with MCI on the first line, for example, and toss them into the Norton **MCIDRVR** outgoing area instead. The **MCIDRVR** can either operate in the background on its own schedule, or you can call it from a batch file to operate immediately. It will dial the service, deliver the outgoing messages, receive the incoming messages, and logoff.

Getting incoming messages into the BBS message base might be a bit tricky. But the addressing is not so very different than incoming Fidonet messages. A custom utility to toss incoming into

your message base might be required, but it shouldn't be too much different from what you use now.

In this way, your callers could conceivably send and receive messages to MCI from your online service. With a widening universe of E-Mail boxes allowed by X.400, addressing will inevitably become a sticky wicket.

The other alternative is to run an X.400 gateway yourself. This gives you the capability of actually being a Private Domain in the X.400 world and sending and receiving calls from all the other X.400 services. The problem is that at this point the software is between five and ten thousand dollars and normally runs on a separate machine that acts as the gateway. With the X.400 universe growing daily, we look for an **$895** package to come out any time now. This would leave your $5000 investment looking a bit gamey. Actually, the X.400 Applications Interface Specification will not be finalized until this summer.

And rumor has it that X.400 could trickle down into the more conventional software channels quite soon. Thom Henderson of System Enhancement Associates has had some success with an excellent mailer program used in Fidonet titled **SEAdog**. According to Henderson, he plans a fairly major summer release of SEAdog with a bit more flash. And modules for ZModem transfer, fax delivery, and yes X.400 links are not out of the question.

There are some services currently that provide "bridges" between BBS systems and public E-Mail services now including DA Systems, Softswitch, and so on. But the initial signup fees can be several thousand dollars up front and they generally make the addressing problem even worse. While they would bear watching, it would appear that the E-Mail services themselves are becoming more hospitable to corporate LANs and BBS systems, and at the same time the software to run your own X.400 site at a reasonable cost is under development right now.

Within the near future, it may be little more difficult to run a desktop X.400 site than it is currently to participate in Fidonet, Relaynet, or UUCP.

UNLIMITED ACCESS

ONLINE SPORTS STATISTICS

Terry McCraith has spent the past twelve years as a professional sports handicapper. He eats sports, he drinks sports, he sleeps with sports. Basketball, football, baseball, - six kids in an alley with a broom stick and a bottle cap will send this guy into an odds-making frenzy.

And he's done very well for himself. By meticulously keeping detailed statistics on the usual, the unusual, the elements that affect the outcome of games, and elements that can't possibly have an effect on anything, he's developed an uncanny ability to pick the winner.

With a home base in New York state, he made weekly trips to the Mecca of gentleman wont to post a wager, Lost Wages Nevada. On each trip, he took along sheaves of printouts of his statistics and passed them around to Casino owners, cab drivers, heavy bettors, grandmothers, and school children.

The correlation between his stats and picks and the game outcomes was not lost on the savvy element of this crowd. Soon they began calling him in New York, requesting his latest "sheet" on NBA games, NFL games, and so forth whenever the appropriate duck was in season. After reading an article on the subject of online communication, McCraith hit on the idea of transferring this often voluminous information by modem. Have your computer call my computer - they can do sports.

After a lot of experimenting with basic communications packages such as Pro-Comm, McCraith also found that he needed something more. He began to inquire from those he met "online" if there wasn't a better way. There was.

Today, McCraith runs a multiline TBBS system with a TDBS database running on top devoted specifically to sports statistics he calls ONLINE SPORTS. It's probably one of the best examples we've found of basic multiline BBS

technology put into play to disseminate highly specialized information successfully. Most of his competition runs on mainframes if they run on computers at all. And it would appear McCraith is beating the jockstrap off of them.

Online Sports, available at (716)688-6537 is not an online sports service for the faint of heart. There are no cute little histories of Mickey Mantle's early day's, no agonizing over the trade of Willie Mays, and no Bob Costas field trip down memory lane via text file. What is there comprises the most overwhelming collection of nearly 200 statistical data files we've ever encountered, many updated **DAILY**.

Almost all of the text reports we saw online consisted of tabular data listing team performance under every conceivable condition. How does Phoenix do on Wednesday's against Eastern Conference NBA teams? How does Nolan Ryan do against St. Louis Cardinals on Thursdays - away - in wet weather? What is Denver's record against San Francisco for the past ten years - away - or at home? How many points? What point spread was given? Taking into account the line, did bettors win or lose betting on San Francisco? We checked Philadelphia against Phoenix (tomorrow's NBA final in Denver) and found the win loss record of Philly against Phoenix's entire division, and the same information on Phoenix's win/loss against Philly's entire division, as well as cumulative point scores, differentials, win/loss against the line, and enough other esoteric numbers on the two rivals to burst a Lotus 123 spreadsheet at the seams.

Table after table, screen after screen, does anyone care about all this Sports esoterica? You bet they do. And they bet - they do. Online Sports isn't for sports fans. It's for people who bet money on sporting events and want the edge going in. All information is presented for the professional gamblers point-of-view. Hunter S. Thompson would wet his pants.

The system requires a $75 signup consisting of $25 setup and $50 on account. The account is drawn at $5 weekly and 25 cents a minute. "Special" reports and outright picks are ala carte at anywhere from $10 to $100 a pop for the really

devoted gamblers. But for raw statistical data, the basic menus are simply overwhelming.

The system itself is colorful, graphic, extremely well laid out, and the reports are accessible. The system is strictly a pay service with little in the way of slick marketing. If you know what you want and have your money ready, you can get online.

But McCraith did make a special exception in our case and agreed to a fifteen-minute full-action tour for Boardwatch readers. Dial the system at (716)688-6537. At the ID: prompt enter **BOARDWATCH**. At the PASS-WORD: prompt enter "sports" in lower case letters. The entire system is available for your perusal but look quick, there's a lot of ground to cover in fifteen minutes. All text files can be viewed online but all are available for download as well. According to McCraith, most of the regular users get in, grab the files catering to their specific system of analysis, and get out anyway.

If you'd just as soon suck on a cold cup of suds, watch the pompon girls, and enjoy the game, there are more entertaining services than ONLINE SPORTS. But if you really like taking the numbers apart on who's going to win, Online Sports is as strikingly handsome a service as we've seen online. Online Sports, P.O. Box 543, Williamsville, NY 14231-0543; (716)688-2667 voice.

TOLL-FREE ZENITH SUPPORT BBS

The early days of personal computers were financed, developed, nurtured, and indeed created by a small segment of society devoted to gadgets and electronic inventions of all types. In those days, academics and businessmen derided the entire concept of these kitchen table inventors. To hear them now, you would think the entire desktop computer phenomenon was their idea in the first place.

The early hobbyists did have one friend of some import. Heathkit supplied electronic components, test equipment, technical data, and complete kits of most anything you might care to put together using electronic components.

Letter Quality Print from an El Cheapo Printer

Yardley, PA -- Scientists say that human beings use only about five percent of their available brain capacity. Much the same could be said of the typical nine-pin or "nine-wire" dot matrix printer. They're fine for quick drafts and screen dumps, but few produce business correspondence you can be proud of.

Well, if you have an IBM or compatible computer, stand by for a big surprise. You really *can* get quality from an inexpensive nine-pin dot matrix printer so good that you will absolutely not believe your eyes. Crisp character definition, a wide variety of fonts (typestyles), and special print features so impressive that the correspondence you produce need never take a backseat again.

And the price? The price may be the best part of all, since the software that makes all this possible is shareware. That means it's widely available, usually for the cost of a disk and postage or several minutes of online time.

It also means that you get a full-blown, commercial-quality package, complete with an on-disk manual ready for printing. But most important of all, it means that you don't have to pay the programmer even a portion of the modest, voluntary registration fee if you don't like the product. It's "try-before-you-buy," sofware on the honor system.

Trouble in Paradise

There's just one problem with shareware and its close cousin, public domain (PD) software: There is so much of it that it's nearly impossible to know which programs to get.

CompuServe, GEnie, BIX, and others have tons of the stuff for you to download. So do most bulletin board systems (BBS). But how many times have you been online and, intrigued by a file's description, decided to download it -- only to find that it's either trash, or buggy, or not at all what you were looking for? Worst of all, obtaining that clunker just cost you maybe half an hour of connect time or long distance charges.

Mail order firms are generally a less expensive alternative. But have you seen their catalogues? Most offer dozens of programs for each application --

15 spreadsheets, 45 word processors, 10 zillion communications programs, and so on. Yet most give you only a single, sparse sentence of description to go on.

So what do you do? You end up ordering -- and paying the distribution fee for -- several disks in each category. Then you spend hours going through them: printing out the documentation, running the program, feeding it sample data, and taking notes on what you like and dislike about the package compared to the others in the pile.

By the time you're done, you're convinced that "free" or not, shareware is no bargain. You add up all your costs and realize you'd have been better off spending several hundred dollars on a commercial package.

And how do you know whether you can count on the programmer to give you the support you need once you send in the registration fee? You could phone each one individually, but who has time for that?

The Answer

If only you could commission someone to do the work for you. Well your wish is about to come true, for St. Martin's Press has published **Alfred Glossbrenner's Master Guide to FREE Software for IBMs and Compatible Computers (530 pp. $18.95).** This is the book longtime Capital PC SIG chairman and ABC News correspondent Brit Hume called "one of the all-time best books" [*Washington Post*].

It's the one about which *New York Times* columnist L. R. Shannon wrote: "If you cannot find at least a couple of pro-

grams that will pay for the price of the book, you haven't read it."

Packed with hands-on tips and tricks -- how to quickly and efficiently tap the free software libraries of all the leading online systems, for example, not to mention BBSs, user groups, and mail order firms -- it's even got a "Background and Basics" tutorial for new and inexperienced PC users.

Written by the author of *The Complete Handbook of Personal Computer Communications* and over a dozen other books, this is the one that doesn't pull any punches -- it tells you exactly which programs to get and why. Including how to get letter-quality output, fonts, and lots of other things from an el cheapo printer.

You'll find copies in all major bookstores and libraries. But as a special offer for **Boardwatch** readers, we'll send you both the book and a disk with the two best letter quality print programs for just $18.95. (Please specify disk size.)

If you want the disk only, send $5 for 5.25-inch or $6 for 3.5-inch media, and ask for PRINTER Disk 2.

The latest Glossbrenner's Choice shareware/PD catalogue and book brochures are available free of charge. Make checks or U.S. dollar money orders payable to FireCrystal Communications. Contact:

**FireCrystal Communications
699 River Road
Yardley, PA 19067
(800) 628-7637**

Figure 1. Three of more than 20 fonts supplied on Printer Disk 2.

```
Courier
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstu
The quick brown fox jumps over the lazy red dog.

Helvetica
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstu
The lazy brown dog bites the quick red fox.

Hollow
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrs12345
When the dog bites. . .
```

Eventually, they did venture into personal computers and there are probably still a few Heath H-8 terminals out there somewhere in service. The notable thing about Heath Kit was that you could get replacement parts and technical data quite easily.

Eventually, Heath Kit was purchased by Zenith. Today, much of the same spirit of support for technical users still remains. Zenith has of course introduced a variety of IBM compatible computers. They have had some difficulties in that the version of MS-DOS used and the computers themselves have exhibited some suspicious anomalies that have brought the question of "compatibility" up repeatedly. And the price on these units is a bit shy of being bargain basement. Zenith computers might even be characterized as a bit pricey.

On the desktop front, the proud price and compatibility questions have not served the company well. But the company has done remarkably well in the laptop market. According to International Data Corporation, Zenith has captured fully 23.9% of the market for laptop computers compared with 21.2% for Toshiba.

And given the long history of excellent technical support enjoyed by Heath Kit, perhaps we should not have been surprised by one of the most outstanding technical support electronic bulletin board systems we've had the pleasure of dialing. The **Zenith Data Services Technical Support Bulletin Board System or ZDS-TSBB** as it is acronymed, operates on a toll-free **(800)888-3058** in Chicago Illinois. Local callers can reach it at **(312)745-2640.**

Operated by Colleen Przybylski, the system runs modestly using the public domain BBS software package RBBS-PC. And it proves again that it is not crucially important how you say it, the meat of the matter is what you have to say online.

The system offers the most complete online technical support for a full computer system we have seen online. Hundreds of Field Service Bulletins, Technical Support Bulletins, Configuration Charts, Complete Parts Lists for most computer models and Recommended

Replacement Parts Lists were available along with product information and even errata for service manuals was provided online. Most computer vendors wouldn't give you a complete parts list for one of their products even under court order and Papal Decree. Zenith has them online for download.

We found a nationwide list of distributors who carry an apparently rare **CR2430** lithium battery used in the new tiny laptop the MinisPort. The system boasted a training class schedule, a list of Zenith Service Center managers, and endless notices of jumper settings that were commonly missed during installation, and other notices on how to get your Zenith running with such and such a third party product.

For example: a notice noting that Traveling Software's Battery Watch program version **1.0E** does not operate correctly with Zenith laptops featuring a version **2.7B** or later ROM. The fix is to contact Traveling Software for the **1.0G** version of their program which apparently Zenith helped them fix. Other bulletins described use with AST Rampage cards, Seagate Hard Disk Drives, and other third-party add-ons.

Another notice advised quite forthrightly that there was a bug in the MS-DOS version **3.30.06** they had supplied. It would not properly restore from a disk backup if the date was any day in October of any year.

One product that has attracted some attention is Zenith's Flat Tension Mask VGA monitors. These displays are intensely bright and attractive. On the ZDS-TSBBS, they had diagnostics programs, alignment graphics, and an alignment procedure text file for each of several monitors.

That Zenith Data Systems provides such current, honest, technically indepth information about their systems at all is to their notable credit. That they provide it to their customers through the convenience of an online service is outstanding. But that they do so on their nickel via a toll-free number is simply incredible. While not exceptionally entertaining for the chat crowd, if you own a Zenith desktop or laptop unit, this number belongs at the top of your dialing directory. Colleen Przybylski, Ze-

nith Data Services, CDS Customer Service Department, Chicago, IL; (312)745-2593 voice.

FREE AIDS INFO ONLINE

Fog City Online Information Service has announced **FREE** access to its unique online AIDS information resources, including several AIDS publications, networked message areas, and volunteer skills bank.

The AIDS publications include newsletters, a 7 MB database, and the entire text of the book *Surviving and Thriving with AIDS* available online. Newsletters include *People With Aids (PWA) Newsline* from New York, *AIDS Treatment News* by John James, and *DAIR Update Newsletter* from the Documentation of AIDS Issues and Research Foundation.

The AIDS Bibliographic and Abstract Service is a **7 MB** online AIDS computer resource database available for researching AIDS questions.

Two networked message areas are echoed to hundreds of other computer systems including the International AIDS/ARC conference area and a message conference titled **SURVIVORS,** moderated by an individual who himself suffers from AIDS.

Access to AIDS information is provided as a free public service by Bill Essex, operator of **FOG CITY,** a ten-line commercial BBS serving the San Francisco area. To access the service, dial **(415)863-9697.** In response to the **FIRST NAME:** query, enter **AIDS.** At the **LAST NAME:** prompt, enter **INFO** if you have an **80** column terminal or **NEWS** if you use a **40** column device.. No name or password is required so all inquiries are entirely confidential. Fog City, 584 Castro Street #184, San Francisco, CA 94114; (415)863-8867 voice.

REAL-TIME STOCK QUOTES ONLINE

by David Hakala

Olde Discount Corp. gives small-fry investors information equality with the pros through Smartvest, an online service that eliminates the fifteen-minute delay common to other quoting ser-

vices. Olde clients (and young ones too) with a minimum of $5,000 in their trading accounts can access Smartvest without special software. Smartvest also includes financial news and historical analyses, investment, checking and credit card account management tools, even free checking and credit card accounts.

Evidently, the NYSE and other exchanges are attempting to woo back the individual investor, scared off by too many tales of insider trading. Individual market players have long grumbled about the exchanges' policy of delaying online quotes by a quarter-hour, except to high-power traders who can afford $200-300 per month for access to real-time numbers. Fifteen minutes is an eternity in today's volatile market, where computers turn small price twitches into landslides at electronic speeds. Imagine surfing with a fifteen-minute information delay, and you'll understand why most small investors miss the wave.

Personal computing tools make it theoretically possible for the small investor to play as sophisticated a strategy as the huge institutional traders, but the little guy has been handicapped by lack of timely market information. Smartvest closes one of the last gaps.

The Account Services option includes real-time quotes at just $0.25 per minute, compared to $2-3 on some other services. There are no start-up or monthly minimum fees. This option also includes online order entry, brokerage account recall, histories of your Investors Credit Union checking and credit card accounts, closing index and market quotes, USA Today DecisionIine and special reports issued by Olde.

Premium services cost $1.00 per minute. These include Argus Research, Comtex OmniNews, Standard & Poor's MarketScope and Vicker's On-line. The company also offers a custom portfolio management program for a modest $20.00 to new subscribers.

Online charges are automatically deducted from the balance in your account, and 20% of brokerage fees paid to Olde are credited toward online charges (up to 100% of a given month's online charges). "For a limited time

only," new subscribers get 30 free minutes in each of the premium services, two hours free time in all.

Olde is a discount brokerage firm, designed for the savvy investor who likes to handle his own trades.

Only "non-professional" traders qualify for a Smartvest account. This restriction essentially precludes anyone required to register with the SEC or other regulatory body, any legally-defined "investment adviser," or any employee of an unregulated institution who would be considered an investment adviser or be required to register if he were not employed by an exempt institution. The information obtained from Smartvest is, naturally, restricted to "personal, non-business use." Olde Discount Corp.: 751 Griswold Street, Detroit MI 48226. Voice: (800)234-1100.

CAREER SERVICES NETWORK

by David Hakala

Corporate Information Services, Inc., brings us a very well-done BBS named OLIAN (On-Line Information Access

Network: (703)450-1790). OLIAN in turn consists of four subsystems. We focused on the two devoted to job-hunting, but there's also a real estate listing area and a general classified/for-sale section.

The Career Services Network is a fine research tool for anyone considering a job change. It includes records on over 5,000 different corporations and their branches, salary surveys and benefits comparisons. A library of how-to-find-a-job tutorials complements the data.

Current job openings are found in the Career Placement Network. Each week's current openings can be searched online or manipulated with free software provided by CIS. CPN also includes a message forum where job-hunters can exchange leads, local market intelligence, and sympathy.

The current job openings are concentrated in the Virginia, Maryland and Washington, DC, area. They can be searched by location, company code (if you absolutely must have a job with Campbell's Soup), level of experience, degree, salary desired and occupational

code. The last criterion is limited to six choices: accounting, "business/management," data processing, engineering, medical and marketing/sales.

Various combinations of criteria are allowed, so the search can be very precise, or a loose search can list all available jobs. "Fuzzy searches" are also possible; you might specify that a job need only meet four out of six items on your wish-list to qualify as a hit.

The system first displays a summary of your search results, a nice touch omitted from many other job-hunting systems. It helps determine whether you have too few or too many hits without downloading a list of indeterminate length. The summary also shows which criteria may be overly restricting the search. Eliminating one could vastly increase your options.

Full job records include company, address, contact person and phone job title, degree and experience required, salary range and a four-line job description. Jobs are posted by the hiring companies. We counted about 150 in our last visit to CSN.

Long-distance callers will appreciate the ability to download archived files containing the current week's job openings, and the free software CIS provides to manipulate these files. The Job System software will generate mailing labels, call sheets and other reports.

OLIAN, the host of CSN and CPN, is an interesting story in itself. It is touted as a proprietary on-line network shell for hosting tenant services like CSN and CPN. Standard features include the ability to interface with external applications such as the Job System software described above.

Full-screen **VT100** emulation allows callers equipped with **ANSI** to simulate pull-down menus with scrolling menu bars. The "pull-down" menus are novel, but not well-suited for **1200** baud communication; the screen takes too long to refresh each time you cursor down to the next menu option. Callers have their choice of menu-driven, command line or "jump" command entry (**GO MAIN**, for instance).

All callers receive free time and download privileges on their first call. New registrants get **30** minutes a day for the first month, **15** minutes free time thereafter. A mere **$9.95** a year boosts your time limit to one hour, allows downloading of jobs, corporate profiles and the Job System, and includes a quarterly career newsletter.

Corporate Information Services, Inc.: P.O. Box 3880, Reston, VA 22090 Data lines: **(703)450-1790, (703)450-1791.**

BERKELEY MACINTOSH USER'S GROUP BBS

At times it seems it's an IBM world among online services. But the growing popularity of the Apple Macintosh Computer cannot be ignored and Apple owners want to be online too. While most of the commercial services offer Macintosh support, and in fact there is a commercial online service just for Apple Macintosh support, local bulletin boards specializing in Mac files are a little thin yet.

The Berkeley Macintosh User's Group (BMUG) operates a very capable system in Berkeley California titled, appropriately enough, the **BMUG BBS** at **(415)849-2684**. And ironically enough, the system runs on an IBM compatible system using The Bread Board System (**TBBS**) software and four Racal Vadic **VA4224E** rackmounted modem cards. We've run into this before. The official line is that the only thing the "old IBMs" are good for is running a bulletin board. More realistically, multiline BBS software for the Macintosh just hasn't matured enough to offer a viable alternative as yet. The Mac has some intrinsic abilities that could be employed to offer some fairly substantial innovations in online services, but so far it just hasn't come together.

BMUG has been in existence for five years and enjoys a membership base of **12,000.** You can sign up for the group online for $40.

The system is laid out a bit oddly in that the sysop, Raines Cohen, has attempted to make the interface as Mac-like as possible under the limitations of the ASCII characters Mac users can read. A services bar across the top of the screen lists options such as Messages, Library,

Conference, Groups, Options, and Quit. The result, though unusual, is very usable.

The system offers a fairly substantial library of Macintosh programs and files. Special interest sections are available including an InterImage Area for Computer Artists and a Mac Network Administrators Forum. We perused the artist conference but when we tried to enter the Net Admin forum, we received the message SECURITY TOO LOW. We get it. Network administrators are clearly the same no matter what platform they're using.

The system provides fairly detailed minutes of the group's weekly meetings going back to September 10, 1987. The current rage seems to involve Apple's new high-end machine, the **fx**, as well as some attractive memory upgrade deals. They also announce Mac related job openings at the meetings.

The overall effect is one of being well connected to a good support group for Macintosh owners. If you own a Mac but don't really have the support of a local group or BBS, this system may fill the bill. BMUG, 1442A Walnut #62, Berkeley, CA 94709; (415)549-2684 voice.

SOFTWARE

PKWARE ANNOUNCES RELEASE OF PKZIP 1.1

The preeminent staple shareware program for online communications has been the compression/archive utility. Almost all programs for IBM compatible computers consist of multiple files. Some may be printer drivers, screen drivers, data files, configuration files and so on making up a single "program." The compression utilities allow you to combine a series of related files into a single file entity for handling and of course, transport by modem. This is often termed "archiving." Over the years, these utilities have added features to compress the files as well so they are smaller, occupying less disk real estate and requiring less time to transfer by modem.

The means to perform this compression gets a bit technical and several techniques are often combined. Essentially, they work on the theory that certain character strings can be represented in fewer bytes. It takes up much less room for example to say "32 spaces" than it does to actually type out 32 spaces. To actually accomplish this requires some fairly fancy statistical analysis operations.

When you see a program on a BBS, it will typically be a single file ending in a file extension such as .ARC, .ZIP, .PAK, .ZOO, or .LZH. You can determine what utility is required to "unpack" the archive into its original component files by noting this file extension.

Over the past year, the runaway favorite compression/archive utility has been PKWare's **PKZIP** program. Author Phil Katz is widely recognized as the leader in implementing compression technologies in the PC world. PKZip is faster in operation, and generally produces much smaller files than any other utility available. All "zipped" files carry the .ZIP file extension.

PKWare of Glendale Wisconsin released version **1.1** of their popular **PKZIP** compression utility program March 15. The new version changes the format of the .ZIP files created from the previous version **1.02**. Most notably, the program supports use of the full 32-bit accumulator in the Intel **80386** microprocessor on machines where it is available. An 80386 is NOT required to run the program, but it will take advantage of the extra iron if available. Overall speed improvement of typically **5** to **25%** percent has been incorporated and the resulting files are slightly smaller as well. In some cases, speed increases of up to **5X** are possible.

In addition to the welcome speed and size enhancements, the new version supports an authenticity verification function that could dramatically cut down on trojan horse, virus, and other "vandalware" problems. Essentially the new version allows software companies and shareware authors who register their PKZIP program to receive a serial number. A command line switch used when compressing files then encodes this number into the files themselves. When the archive is extracted using PKUNZIP, the serial numbers are detected and an **Authenticity Verified Company X** message appears on the screen. If in the interim, anyone has unzipped and rezipped the files using another copy of PKZIP, the customer will see a Warning Authenticity Failure message.

PKZip Version 1.1 is available on most bulletin boards in the self-extracting file **PKZ110.EXE**. To obtain the product directly from the author, remit the $47 registration fee plus $3.50 shipping/handling to PKWare Inc., 7545 N. Port Washington Rd., Glendale, WI 53217; (414)352-3670 voice; (414)352-7176 BBS; (414)352-3815 fax.

COMPUTER HYGIENE

Do you believe this? And now a word about.....personal computer hygiene. Personal computers are not easy to clean. Keyboards are cluttered with - well, keys. And it seems that all personal computers by some sort of technological decree must be white. White plastic. Not usually a smooth white plastic but a pebbled white plastic particularly prone to collect dirt.

Monitor screens are the worst. They collect dust, cigarette smoke, and greasy film so well you would think they were designed for it. Most users wipe the screens off with a spritz of Windex and a soft tissue. Well that takes care of the outside surface of our glass screen. But how do you clean the inside.

A file is currently making the rounds titled **GLASS.ARC**. This remarkable piece of software is entirely free, in fact the author doesn't identify himself other than as the proprietor of FAKEWARE, INC. But the program cleans the inside surface of the video monitor screen glass. When run, a dark screen is displayed with a little duster that brushes the crud off the inside of your computer screen. Amazingly effective. We use it every day.
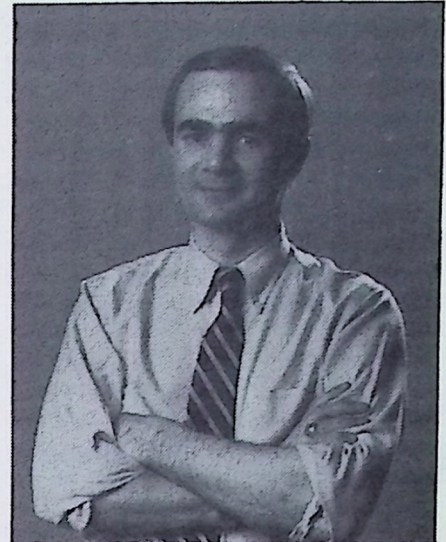
Phone Sales the Easy Way

by Alfred Glossbrenner

I don't know about you, but I truly despise telephone solicitations. It seems to me like an invasion of privacy. I mean, how do these purveyors of frozen meats, financial planning services, and red-hot investment opportunities *know* that I'm home and just about to sit down to dinner if they don't have someone peeping in my window?

I can see it now — some guy's standing in the shrubbery outside the kitchen trampling the pachysandra. He leans in. My wife is putting the spaghetti in the colander, and I'm grinding the coffee. There's the windup. The guy in the bushes gives the high sign to "Frank" who's sitting in a car at the curb, a phone cradled in his ear. My phone suddenly rings. And here's the pitch: "Mr. Glossbrenner? Mr. Alfred Glossbrenner? How are you today?"

At this point I have a number of options. I could simply hang up. The trouble is, I was raised in the Midwest and simply hanging up on somebody runs counter to all of my childhood programming. I can do it when pressed, but I'm always conflicted about it. On the other hand I know enough not to answer the caller's query about my current condition and general mental outlook on the day. That leads to conversation, the one thing I want to avoid when my dinner's ready.

So instead, I answer a question with a question: "Hello, what are you selling?" The reply is as predictable as the sunrise: "Why I'm not selling anything. I simply wanted to let you know about the wonderful opportunities that are only now emerging in Florida swamp land."

"Right," I say. "Thanks for your interest, but I just bought a lot of swamp land from the person who called last week, and I'm tapped out." The caller rarely gives up. "Oh, but our swamp land is much. . ." At this point I feel free to butt in with my heartfelt thanks for his or her call and simply hang up.

My wife's mother has an even better solution. She lets the caller begin his or her pitch and then frantically interrupts: "Excuse me. Excuse me. Do you have a pencil?" The inevitable reply is "Yes." "Well take your pencil and " -- my wife is from the Midwest too, so this isn't going to end the way you think -- "draw a line through my name on your list. I'm really not interested." Click.

On the other hand, since I work from home, the calls I get are typically aimed at homeowners. Even today, with some two thirds of all women in the work force, telephone salespeople are taken aback to encounter me instead of the "homemaker" they were expecting. Some recover gracefully, dutifully plowing ahead with their sales pitch for carpet cleaning or discounted panty hose ("slightly flawed, but you'd never notice. . . possibly for the lady in your life?"). Others simply give up.

Business-to-business calls are another matter. Businesses expect to get calls from other businesses. After all, that's what commerce is all about. If you're the business placing the call, the problem you face is doing so as efficiently as

possible. Telephone sales, like direct mail, is a numbers game. The only way to make it work is to place *lots* of calls and play the percentages.

I know from feedback I get from *Boardwatch* readers that many are in a position to benefit from telemarketing techniques. And while I don't have space here to offer pearls of wisdom on how to make a good sales call, I can sure give you some ideas on how to use your computer and modem to automate the process.

I'll assume you've already got a computer and a modem. The next thing you need is a telephone headset. I've been using a headset for nearly ten years, and frankly I don't see how anyone who works with a computer can operate without one. It may be that headset manufacturers are simply very slow to catch on, but I would have thought that by now headsets would be at least as widespread as computer mice.

That definitely is not the case. But I have noticed headsets appearing in office supply discount stores in the last year, so they shouldn't be too difficult to get a hold of. Most of the better models are made by Plantronics, either under their own name or under the AT&T brand.

Typically headsets connect to the phone through a small switch box (supplied). If you plug your handset into the box, you can switch between handset and headset at will. Costs range from $50 to $70, and be sure to get a model that's compatible with your type of phone (electronic or non-electronic). Some models, like the Plantronics Spirit 4, include a keypad and are designed to be plugged directly into the wall, eliminating the phone entirely.

Okay. So you've got your headset, modem, and computer. What about phone numbers and phone dialing software? Phone dialing software has the ability to automatically locate a phone number anywhere on your screen and dial it through your modem at the touch of a single key.

The idea is to get a list of numbers recorded on disk as a text file or database file that can be displayed. Once on the screen, the telephone dial-

ing software can take over and place the call. This avoids the time-consuming, error-prone process of typing in phone numbers by hand.

I'll cover the software end of things in a minute. First, let's look at phone numbers. There are any number of databases out there with business names and phone numbers. The Dun & Bradstreet databases or the Encyclopedia of Associations database, both of which are on DIALOG, leap instantly to mind. But these products tend to be expensive to use.

To my mind a much better solution is the Instant Yellow Pages database from American Business Information, Inc. The company got its start as a mailing list broker, and mailing lists and labels still form the bulk of its business. But the firm has kept up with the times by offering much of the same information as an online database. And as with all online databases, this one is searchable.

The Instant Yellow Pages covers over 14 million U.S. businesses. The core information is derived from every Yellow Page directory in the country. This is supplemented by phone calls to obtain the name of the owner/manager of the firm, sales volume, number of employees, ZIP code, county, and any franchise, brand, or speciality information that is available. Each listing also includes one or more of 7,000 SIC (Standard Industrial Classification) codes to help you identify specific types of businesses.

With the Instant Yellow Pages, you can thus quickly search for and download a list of every car dealer in a particular county or ZIP code, or every law firm or real estate office in a given state. The possibilities are endless.

The first year's subscription is $95, but as an apparently permanent "special introductory offer," the company will give you $100 worth of free usage when you send in your registration fee. After your first year, there is an annual charge of $65. The cost is 13 cents per name and address downloaded and $1 per minute for connect time.

In addition to the name, address, and phone fields of the standard record, the Instant Yellow Pages offers "Company

Profiles." These include additional information, like the all the Yellow Page classifications the company has appeared under, the size of the ad, and the first year the ad appeared. These records are 50 cents each.

Several downloading options are available. You can accept the information as a simple on-screen display, logging it to disk. You can opt for mailing label format (with no phone numbers). Or you can have the system send you the information in a form ready to be imported into your favorite database.

The last option is probably the most useful for most people. This is because, once the addresses are in your database, you can use the database program to produce the labels for a direct mail piece. After the mail has gone out, you can then use the same information with phone dialing software to place your follow-up calls. Alternatively, you can simply display each record and let the phone software go to work to help you make cold calls.

To handle your dialing chores you'll need a package like SideKick or SideKick Plus (IBM or Mac) Hotline Two (IBM) or The Phone Book Library (Mac) from General Information, Inc. Each is an excellent program, but Hotline's intense focus on phone management gives it the clear edge in this area.

I've tested them both and when it comes to working the phones, Hotline is enormously impressive. Among other things, the program comes with a current list of some **10,000** major firms on disk, complete with searchable SIC codes.

Vern Buerg was good enough to send me a copy of his new **LIST Plus** program and I want to tell you that, as you would expect from Vern, it is very impressive. It too includes a phone dialing capability, but **LIST** is not memory resident. And SideKick and Hotline are. For working the phones, this makes all the difference.

It means that you can load your database program or word processor and display an address and phone number on the screen. You can then hit a key or key combination to call up SideKick

or Hotline and tell it to zero in on the first phone number it finds. Then you simply hit Enter to dial.

When the connection is made, you hit another key to cause SideKick or Hotline to return you to the underlying program. This way you can use your word processor to take notes on the call or use your database to generate an order. Since you're using a headset, your hands are free to operate the keyboard.

When one call has been completed, you merely repeat the process, calling up SideKick or Hotline and telling it to dial the *next* number. There are many other features as well, but this is the essence. With tools like these at your fingertips, you can easily make 25 to 30 calls a day. That's as many as 7,500 calls a year. If only two percent of those calls yield sales, you will have added 150 firms to your customer base. And of course, if you've got a good product and come across well on the phone, you can expect to add many times that number.

SideKick is widely available, but Hotline has relatively few distributors at this writing. And most computer users don't know about the Electronic Yellow Pages. Both firms will be happy to send you free information. Here's where to write:

Electronic Yellow Pages
American Business Information, Inc.
5707 South 86th Circle
Omaha, NE 68127
(402) 593-4593

General Information, Inc.
401 Parkplace
Kirkland, WA 98033
(206) 828-4777

[Alfred Glossbrenner is the author of the just published *Glossbrenner's Hard Disk Handbook* [Osborne/McGraw-Hill], as well as *The Master Guide to FREE Software for IBMs and Compatible Computers* [St. Martin's Press] and many other books - Editor].

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - MAY 1990

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Access LAI	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia ,CA
ADA Information Clearinghouse	(202)694-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington ,D.C.
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	,KS
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills ,NC
Ashton-Tate Technical Support	(213)324-2188	dBase and Multimate Support - CIS HOST NAME:ATBBS	Ashton-Tate Corporation	Torrance ,CA
AST Technical Services BBS	(714)852-1872	Superb support system for AST Computer Products	AST Research Inc.	Irvine ,CA
AT&T Support BBS	(201)769-6397	Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield ,NJ
Audiophile Network	(818)988-0452	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Van Nuys ,CA
Baud Town	(818)893-0340	Relaxed, Friendly Social BBS- USA Today/Newsbytes/Boardwatch	Linda Saenz/Fred Gernand	Granada Hills ,CA
BBS Press Service	(913)478-9239	Home of INFOMAT Online Weekly PC News Magazine	Alan Bechtold/BBS Press Service	Topeka ,KS
BellSouth's TUG Gateway	(404)594-3964	Transtext Universal Gateway - Atlanta Journal-Constitution	BellSouth	Atlanta ,GA
Best Friends BBS	(714)832-5902	DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley ,CA
Big Peach BBS	(404)446-6650	Home of Automenu and Treeview Software	Marshall Magee/Magee Enterprises	Norcross ,GA
Big Sky Telegraph	(406)683-7680	Education/Econ Development info to Montanna rural Communities	Montanna Rural Education Network	Dillon ,MT
BMUG BBS	(415)849-2684	Support for Macintosh owners - files - conferences,	Berkeley Macintosh Users Group	Berkeley ,CA
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove ,PA
Boston Citinet	(617)439-5699	City of Boston Information Service - Advertising Supported	Advanced Videotext Systems	Boston ,MA
Brown Bag Software BBS	(408)371-7654	Power Menu/ PC Outline Software Support	Brown Bag Software	Campbell ,CA
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford ,CT
ButtonWare BBS	(206)454-2629	PC-File dB / PC-Calc / PC-Type Software Support	Jim Button/ButtonWare	Bellevue ,WA
C.A.R.L Library Service	(303)830-1165	Citations to 2 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver ,CO
Canada Remote Systems	(416)232-0442	Probably Canada's largest BBS/Online Information Service	Jud Newell	Toronto ,Ontario
CatHouse BBS 206/2901	(805)395-0650	Multiline Support System for Wildcat BBS Software	Mustang Software	Bakersfield ,CA
Cathouse II SuperSystem	(513)528-0505	TV Satellite Dish Info - Videocypher Descrambler Info	Seed City Engineering	Cincinnati ,OH
Census Bureau Office Automation	(301)763-4576	Microcomputers and Office Automation	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Census Bureau Personnel Division	(301)763-4574	Employment Opportunities Within the Census Bureau	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Channel 1	(617)354-8873	Thirty-line PCBoard System - 2.5 Gigabytes	Brian Miller/Tess Heder	Cambridge ,MA
Chicago SysLink	(312)622-4442	TRS 80 Support - Adult Chatline Function	George Matyaszek	Chicago ,IL
Ciassi Computer Fieds	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indiannapolis ,IN
Clean Air BBS	(408)298-4277	Environmental Health/Cigarette Smoking Topics	American Lung Association/ Sheila Blash	San Jose ,CA
Cleveland Freenet	(216)368-3888	Cleveland City Information/Ohio Governor's Office Online	Case Western University/AT&T/Ohio Bell	Cleveland ,OH
COCONET	(619)456-0815	San Diego Movies/Plays/Theatres Online - Requires Software	Brian and Patricia Dear	La Jolla ,CA
Computer Business Services	(714)396-0014	Computer Columnist John C. Dvorak's office BBS	John C. Dvorak and Nick Anis Jr.	Diamond Bar ,CA
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale ,Ontario
Crosstalk Communications BBS	(404)641-1803	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell ,GA
CTC IEEE Employment Database	(508)263-8873	Online Database of 20,000 Resumes for Engineering	Career Technologies Corporation	Andover ,MA
Dante Project BBS	(603)643-6310	Commentary/Research on Dante's Divinia Comedia	Dartmouth College	Hanover ,NH
DataLink RBBS System	(214)394-7438	Weather, Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton ,TX
Dr. Dobbs Listing Service	(603)882-1599	Source Code from Dr. Dobb's Journal, MIPS, and DBMS Mags.	M&T Publishing/Computer Metrics	Redwood City ,CA
Economic Bulletin Board	(202)377-0433	Economic Statistics/GNP/CPI/Employment, Trade Opportunities	US Department of Commerce	Springfield ,VA
Eesti BBS #1	7 0142 422583	First BBS in USSR - Estonian Business Issues	Lembit Pirn/Estonian Business Assoc.	Tallinn ,Estonia
ELISA II	(202)697-3632	Export License Status Advisor - Technology Export Issues	Defense Technology Security Admin.	Washington ,D.C.
Energy Info Admin E-Publications	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington ,D.C.
Event Horizons	(503)777-1578	Digitized Graphics Image Library	Jim Maxey	Portland ,OR
EXEC-PC	(414)789-4210	Largest BBS in US - 90 Lines - 70,000 files - 4 Gigabytes	Bob Mahoney	Shorewood ,WI
Far West BBS	(604)381-4430	Large Western Canada Galacticomm Info System	Ren L'Ecuyer	Victoria ,BC
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia ,MD
Federal Deposit Insurance Corp.	(202)737-7264	General Microcomputer Information	R. Campbell and L. Rudolph	Washington ,D.C.
Federal Job Information Center	(313)226-4423	Federal Job Opportunity Lists available online	US Office of Personnel Management	Detroit ,MI
FEDLINK ALIX	(202)287-9656	Info on Federal Libraries -Excerpts Library of Congress News	Federal Library Information Network	Washington ,D.C.
File Cabinet BBS	(215)678-9854	10-line PCBoard System. 959 MB-100 Conferences-80,000 files	Dan Bair	Wyomissing ,PA
Fishing Link	(608)526-9292	River/Lake Charts/Solunar Tables/Fishing Info/Recipes	Jim Pratt	LaCrosse ,WI

BBS Name	Phone	Description	Contact	Location
Fly-Fisher's Forum	(416)463-9090	Information on the Sport of Fly Fishing	Bryan Moir/Skyline Hotel Toronto	Markham ,Ontario
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs	Bill Essex	San Francisco ,CA
Forbin Project, The	(319)233-6157	Home of QModem SST Communications Software	John Friel III	Cedar Falls ,IA
GAO Bulletin Board	(202)275-1050	Lotus/dBase/Word Perfect User Tips	U.S. General Accounting Office/Sheryl Lee	Washington ,D.C.
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps	Community Educational Svcs. Foundation	Arlington ,VA
Greenpeace Environet	(415)861-6503	Ecological and Peace Issues - Disarmament/Toxics/Wildlife	Dick Dillman/Greenpeace	
GT PowerComm BBS	(713)772-2090	Home of GT Power Communications Software	Paul Meiners/P&M Software	Houston ,TX
Hay Locator	(317)494-6643	Database of Hay/Straw Suppliers and Buyers	Purdue Univ. Agricultural Computer Net	,,
Hayes Advaneed Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra	Hayes Microcomputer Products	Norcross ,GA
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish	Mark Miller	Philadelphia ,PA
IBM Users Group Support BBS	(404)988-2790	IBM PC User Groups Database - Newsletter Exchange	IBM National Support Center	Atlanta ,GA
Imaging GraphicsLine BBS	(415)968-1834	Paradise/Vericom Graphics Products - .GIFs	Western Digital/Nan Coley	Milpitas ,CA
Inbound/Outbound	(212)989-4675	Telephone Sales Publication Online Service	Harry Newton Publications	New York ,NY
Info-Source Canada	(416)574-1313	Online publications	Eric Feistmantl	Hamilton ,Ontario
Information Resources Services	(202)535-7661	Fed Micro Procurement Rpts. - List of Banned Contractors	General Services Administration	Washington ,D.C.
Intel Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286	Intel Corporation PCEO Division	Hillsborough ,OR
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis	Don Shepherdson	Bellevue ,WA
JAG-NET	(202)325-0748	Navy Judge Advocate General's Information Network	U.S. Dept. of Navy / Chris Buechler	Arlington ,VA
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes	JDR Microdevices	San Jose ,CA
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.	Alpha Systems Inc./Bill Griffin	Roswell ,GA
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data	Federal Reserve Bank of Minneapolis	Minneapolis ,MN
Lasergerns Computer Hotline	(602)867-7258	Mail Order Laser Salvage/Supply - Laser Eavesdropping Device	Meredith Instrument Company	Glendale ,AZ
LUMINA	(612)626-2206	Libraries of Univ.of Minnesota Integrated Net Access7E1VT100	University of Minnesota	Twin Cities ,MN
Maxi-Micro Ticker/Screen	(212)809-1160	2000 Closing Stock Quotes/Market Research/Order Entry	Max Ule & Company	New York ,NY
MCI ONE Consultant Support	(800)873-5548	ANI Developers/Rates/Press Releases/Tech Notes	Ed Belisle/MCI Consultant Liason Program	Washington ,D.C.
MEDCOM BBS Club	(800)445-4227	80 nodes - Games - Chat Lines - News Services	MEDCOMM Information Systems	Anaheim Hills ,CA
Micro Foundry, The	(415)598-0498	520 MB Downloads - Growing to Become the Best - Boardwatch	Thomas Nelson/Clockwork Software	San Jose ,CA
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh ,NC
Microlink B	(303)972-9600	1 Gigabyte of IBM Software - Multiline - USA Today News	Girard Westerberg	Littleton ,CO
Microrim Technical Support BBS	(206)881-8119	Support for Popular R:Base Relational Data Base System	Microrim Corporation	Redmond ,WA
Monu-CAD BBS	(607)264-3307	CAD Designs for Tombstones, Monuments, and Memorials	Jim Faliveno/Monumental Computer App.	Cherry Valley ,NY
NANci BBS	(202)475-1973	Online Version of Naval Aviation News Magazine	Naval Aviation News/Cmdr. John Norton	Washington ,D.C.
NARDAC BBS	(804)445-1627	Zenith Computer Support - List of Federal Micro User Groups	Naval Regional Data Automation Center	NAS Norfolk ,VA
NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Marshall Space Flight Center	Huntsville ,AL
National Agricultural Library	(301)344-8510	Agricultural Info/Research Resources	US Department of Agriculture	Beltsville ,MD
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington ,VA
National Inst.Science Technology	(301)948-5717	Micro Elect.Info Exchange - Virus Protection/Security Issues	National Inst. of Science and Technology	Gaithersburg ,MD
National Publishers Exchange	(813)989-1087	Headquarters for NPE Newsletter - Desktop Publishing	Ed Aborn	Tampa ,FL
National Semiconductor BBS	(408)245-0671	Info and Test Programs for NS16550A UART Chips	National Semiconductor Corporation	Santa Clara ,CA
NAVWESA	(202)433-6639	Naval Weapons Engineering Support	Dept. of Navy / Bill Walsh	Washinton ,D.C. ..
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder ,CO
NOAA Information Technology Exch	(301)770-0069	Microcomputer Applications and Recommendations	National Oceanographic/Atmospheric Admin	Rockville ,MD
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder ,CO
Northrop Career Access	(213)938-5532	Northrop Aerospace Employment Opportunities - 7N2	Northrop Corp B2 Division	Pico Rivera ,CA.
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Laurel ,MD
NYCENET BBS	(212)769-0550	New York City Education Network	New York City Board of Education	New York ,NY
OCRWM Infolink	(202)586-9359	Radioactive Waste Disposal/Hazardous Materials Handling	Office of Civilian Radiation/Waste Mgmt.	Washington ,D.C.
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats	US Department of Education	Washington ,D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs ,CO
Online Sports	(716)688-6537	Large base of Sports Stats for Pro Gamblers	Terry McCraith	Williamsville ,NY
Online Store DLX	(805)656-0379	Online Catalog of PC Hardware/Peripherals - Online Mailorder	Stan Snyder/Online Store	Ventura ,CA
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Norcross ,GA
Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Australia ,
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues	Fran and Norm Saunders	Colesville ,MD
PacComm BBS	(813)938-6722	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Tampa ,FL
PDSLO BBS	(516)938-6722	Home of THELIST - Listing of 3000 Nationwide BBS Systems	Jim Toro	Hicksville ,NY
Personal Resource System	(501)442-8777	Online Publications - Excellent TBBS System	Gary Funk	Fayetteville ,AR
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ.of Mass. Dept. of Physics/Astronomy	Amherst ,MA

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - MAY 1990

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
PKWare BBS	(414)352-7176	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Glendale ,WI
Popular Mechanics Online BBS	(212)582-8369	Automotive, Home/Shop, Electronics/Photography, Science	Popular Mechanics Magazine	New York ,NY
ProComm Support BBS	(314)474-8477	Home of ProComm 2.4.2 and ProComm Plus Comm Prgrms	Thomas Smith/DataStorm Technologies Inc.	Columbia ,MO
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Indianapolis ,IN
Publishers Information Svce.	(312)342-6919	Xerox Ventura Publisher Support/Laser Printing/Scanning	George Weiners	Chicago ,IL
Radio Electronics BBS	(516)293-2283	Radio Electronics Magazine Online Adjunct	Gernsback Publications	Farmingdale ,NY
Random Access Information Svc.	(503)761-8100	10500 IBM/MAC/AMIGA Files - 3000 MaxiPic Graphics	Janice Stevens	Portland ,OR
RGB Computing	(519)824-3997	Multiline Information Service/PC Sales/Large File Selection.	Ronald Spencer - RGB Computing	Guelph ,Ontario
Rose Media	(416)733-2780	Excellent Canadian PC Board System-Publications/Conferences	Vic Kass	Willowdale ,Ontario
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry	Murray ,UT
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation	Washington ,D.C.
Scooters Scientific Exchange	(215)657-5586	Biotechnology/Chemistry/Physics/Astronomy/Space Sciences	Brian Moldover	Willow Grove ,PA
SEAboard!	(201)473-1991	Support system for ARC, SEADOG, and AXE software.	System Enhancement Associates	Wayne ,NJ
Second Ring, The	(203)268-5315	Home of RBBS Software	Tom Mack	Trumbull ,CT
Society for Technical Comm. BBS	(202)393-3557	STC Job Service, Freelance Registry - Technical Writers	Society for Technical Communication	Washington ,D.C.
Sound Advice BBS	(816)436-4516	Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems	Roy Timberman	Gladstone ,MO
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info	Federal Emergency Management Agency	Washington ,D.C.
Synergy	(617)769-5468	Turbo Basic/Turbo C/Quick C/Turbo Pascal/Assembly Language	Gerry Powers/Jim Boxmeyer	Norwood ,MA
Take 3 BBS	(602)482-1001	Reviews of Movies/Videos/ Film Industry Job Clearinghouse	Dave Kidder	Scottsdale ,AZ
Talk Channel	(818)506-0620	DLX-Based Multiline Chat/Talk Service - Sexual Orientation	Gary Clarkson	North Hollywood ,CA
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Clinton Herbarium, Buffalo Museum	Buffalo ,NY
Taxonomic Reference File	(215)972-6759	Online Bacterial Name Database - ORACLE Door	BIOSIS Carol Lock/Keith Pittman	Philadelphia ,PA
TBBS Net 104/23	(303)699-9248	Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc.	Aurora ,CO
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM	Chuck Forsberg/Omen Technology Incorp.	Portland ,OR
Tellx Support BBS	(416)439-8293	Support Service for Tellx Communications Software	Colin Sampaleanu/Exis Incorporated	West Hill ,Ontario
Texas State Law Library BBS	(512)463-1371	Online Legal Periodicals and Citation Database		Austin ,TX
The Business BEIS	(213)477-0408	Microsoft Windows Support	Jim Appleby	Los Angeles ,CA
The Ledge PCBoard	(818)352-3620	Home of Textview Door for PCBoard Systems	Joseph Sheppard	Tujunga ,CA
The LiveWire BBS	(609)235-5297	Online Magazine Subscription Orders	Richard Paquette	Mt. Laurel ,NJ
The Well	(415)332-7190	Unix Conferencing System - $8 monthly plus $3 hourly	Whole Earth Lectronic Link	Sausalito ,CA
Thomas Business Systems	(407)395-7057	Used Computer/Peripheral Price List Online Database	Phil Thomas/Thomas Business Systems	Boca Raton ,FL
TOPS Support BBS	(415)453-5232	Application Notes, Product Descriptions for TOPS LAN	Sun MicroSystems	Alameda ,CA
TurboTax Support BBS	(619)453-0351	Income tax Information - Turbotax 1040 program support	Chipsoft Inc.	San Diego ,CA
U.S. Robotics - Sit UBU Sit	(708)982-5092	Support for US Robotics HST 9600 bps Modems	U.S. Robotics Corporation	Skokie ,IL
United Nations BBS	(201)795-0733	UN Press Releases - Unitex News - Unicef	Dr. James Waldron	Hoboken ,NJ
US Naval Observatory BBS	(202)653-1079	Time - Date - Sunrise - Sunset - Enter @TCO for Commands	US Department of Commerce US Naval Obser	Washington ,D.C.
USA Today Distribution Service	(303)973-4222	Distribution Service for USA Today/Newsbytes/Boardwatch	Boardwatch Magazine	Littleton ,CO
USA/GDR Databank	(609)529-0140	News from East Germany, Rumania, USSR, Czechoslovakia	Council on USA/German Democratic Repub.	Washington ,D.C.
USGS Quick Epicenter Determin.	(800)358-2663	Earthquake Epicenter Data - Geomagnetism7E2	US Geological Survey Earthquake Info Cnt	Denver ,CO
USNO Time of Day for Clocks	(202)653-0351	Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock	US Dept. of Commerce US Naval Observ.	Washington ,D.C.
UT Library Online Catalog	(512)471-9420	Online Library Card Catalog Listing 3.5 million entries	University of Texas at Austin	Austin ,TX
VA Property Listing BBS	(602)640-2371	List of VA held property foreclosures	Veterans Admin - Phoenix Regional Office	Phoenix ,AZ
Vacation Florida Database	(407)839-0333	Florida Tourism Information/Database of Campsites/Hotels	Richard and Barbara Kenney	Orlando ,FL
Vancouver ED-NET	(604)734-3282	Educational Online Service	Vancouver Board of Education	Vancouver ,BC
Ward and Randy's CBBS	(312)545-8086	World's First and Oldest Micro-based BBS - Since 2/16/78	Ward Christensen/Randy Suess	Chicago ,IL
WeatherBank	(800)827-2727	Online Weather Forecasts for Any City - Download Radar Data	Steve Root/WeatherBrief Data Services	Salt Lake City ,UT
WeatherStar Pilot Briefing	(612)296-5426	Pilot Data, Weather, Great Circle Route, Airport Information	Haynes Environmental Systems	Minneapolis ,MN
Western Digital Tech Support	(714)756-8176	Hard Drive/Controller Installation and Config Data	Western Digital Corporation	
XyQuest Support BBS	(508)667-5669	Support for XyWrite Word Processor - Custom Keyboard Files	XyQuest Inc. - Christine Madsen	Bellerica ,MA
Ye Olde Bailey	(713)520-1569	Legal Issues Regarding RBOC Relations with Info Services	Reginald Hirsch; Attorney	Houston ,TX
Zenith Technical Support BBS	(800)888-3058	Technical Support for Zenith Desktop and Laptop Units	Zenith Data Systems Customer Service	Chicago ,IL

SYSOPS

You operate the very best electronic bulletin board system you possibly can. And you try to provide your callers with the best entertainment, news, software, and technical information you can find. We're here to help with online information products you can use to your callers benefit. And that means increased paid subscriptions to your system.

USA Today Decisionline

Published by Gannett New Media each business day, USA Today Decisionline provides a remarkably concise, readable, online morning summary of the events of the day for your callers. Averaging 65 KB each morning in archived format, USA Today Decisionlines provides news on eighteen topical categories including:

Advertising	USA News	Banking and the Economy
Real Estate	Energy	Sports
Health	Technology	Insurance
Telecommunications	International News	Travel
Issues and Debate	Weather	Business Law
Marketing Trends	Personal Investing	Special Bonus Reports

You can place the news gleaned from over 4400 Gannett publications journalists at the keyboard of your callers each AM. Available by 5:00 AM each morning, USATODAY.ARC can be downloaded from our multiline information service or file requested from our mail system using your U.S. Robotics HST 9600 bps or V.32 modem at 9600 bps or higher - less than a two minute connection. And maintenance of this product is so simple to automate, you don't even have to get out of bed. Best of all, USA Today needs no introduction or explanation. It has the name recognition to instantly draw new callers to your system. Put THE most popular daily national newspaper in the world on your electronic bulletin board for as little as $25 per month.

BOARDWATCH Online Edition

While the online information services industry is broadening daily, the number one topic of interest to most callers is still how to put their modem into play for maximum benefit. And since March 1987, Boardwatch Magazine has been the best way to do it. Now, we've introduced an Online Edition specifically for display on your information service. Boardwatch contains the full text of our printed magazine, along with our National List of Information Services containing over 150 product support systems, free government database services, and selected bulletin boards of note from all over the U.S and Canada. Boardwatch places the same information you now hold in your hands - the best information the online world has to offer each month - up on your callers screen. Get the definitive publication for the online world for your system. Boardwatch is available at a quarterly rate of $75 or an annual rate of $250.

To see these products in action, call our Boardwatch Online Information Service at:

(303)973-4222 (2400 bps)

(303)933-2286 (14.4kbps HST/9600 bps V.32).

DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - MAY 1990

TITLE	PHONE	DESCRIPTION	TYPE	MODEM	SOFT	CITY	OPERATOR
Adelante 104/93	443-8292	Central/Latin America News/Issues	IBM	2400	Opus	Boulder	Zhahal Stewart
APSNet	693-6737	Aurora Public Schools Network	Apple	2400	GBBS	Aurora	Columbia Middle School
Arvada 68K BBS	424-9831	Amiga/Macintosh/Atari ST/Motorola 68000	Amiga	2400	BBS-PC	Denver	Reid Bishop
Boardwatch Magazine 104/555	973-4222	Back Issue Index, Dialing Directories	IBM	2400	TBBS	Littleton	Jack Rickard
Boulder Amiga Users Group	494-4470	Amiga Support - Over 1000 Amiga Files	IBM	2400	QuickBBS	Boulder	Ken Frioklas
Byte Shop 104/311	794-5065	Jokes/Good Echomail/Downloads	IBM	96HST	QuickBBS	Littleton	Dan O'neal
C.A.C.H.E	745-4960	CO Apple & Compatible Home Enthusiasts	Apple	2400	GBBS	Denver	Gary Edwards
C.A.R.L. Denver	830-1546	Colorado Alliance of Research Libraries	Tandem	1200	Custom	Denver	N/A
C.A.R.L. Denver	830-2199	Colorado Alliance of Research Libraries	Tandem	2400	Custom	Denver	N/A
C.D. Flayers	825-0419	Computer Discount On-line Store/Amiga	Amiga	2400	TBBS	Denver	Jay Tompkins
Chatfield Armory	972-9023	Firearms for Sale/Trade - Online Games	IBM	2400	QuickBBS	Littleton	Dave Bell
Cheyenne Social Club	423-4710	140 Relaynet Conferences - Downloads	IBM	2400	PCBoard	Denver	Jay Elewitz
Chidvilas 104/207	449-7399	Bhagwan Shree Rajneesh followers	IBM	96PEP	Opus	Louisville	Terry Mooster
CMOS-CO Mtn Operating Systems	322-4078	Amiga/IBM-Utilities-Pictures-Buy/Sell	IBM	96V.32	QuickBBS	Denver	Kevin Truitt
CO State Judicial BBS 104/420	831-1704	Colorado State Judicial ADP Department	IBM	2400	QuickBBS	Denver	Scott V. Hopta
College Board, The	979-7299	Red Rooks College Bulletins/Schedules	IBM	1200	TOS	Littleton	Tom Nielson
Colorado Broadcasters 104/42	341-0129	Commercial Radio Frequency Lists	IBM	1200	Opus	Aurora	Jeff Brothers
Comm-Post, The 104/666	534-4646	Astronomy -725 +MB of Files - Multiline	IBM	96HSTV32	TBBS	Denver	Brian Bartee
Computer Consulting 104/318	973-1002	dBase Database Software Developement	IBM	96Hayes	QuickBBS	Littleton	Jim Bucks
Control Systems 104/417	458-6248	IBM/Compatibles Subscription Board	IBM	96MICROC	RBBS	Denver	Lupe Ramiriz
CP/M SIG INC 104/372	465-1313	Oldest User's Group in Area - CP/M - IBM	IBM	2400	Fido	Broomfield	Al Lundquist
Craig's Place	288-1463	PC Nationals Drag Racing/Chess/Games	IBM	2400	WWIV	Denver	Craig Steele
Crypt, The	696-9084	Twenty Online Games - Adult Messages	IBM	2400	QuickBBS	Denver	Bill Bonic
D-Link 1 104/411	936-2791	Golden Micro Computer Sales/Support	IBM	96HST	QuickBBS	Denver	Bob Wells
Dark Crystal, The 104/421	654-1278	Role Playing Games	IBM	2400	QuickBBS	Denver	Steve Boyd
Dementia	986-9610	American MENSA Denver Chapter	Apple	96HST	GBBS	Lakewood	Chuck Pelto
Denver Area R:BASE Users Group	422-2149	R:BASE Information PC Related Files	IBM	2400	QuickBBS	Lakewood	Paul Fullerton
Denver Computer Investor BBS	440-4128	Financially Oriented	IBM	1200	RBBS		Hugh Casey
Denver Deaf-Net	989-9245	Hearing Impaired/Computing	IBM	2400	QuickBBS	Lakewood	David Sheneman
Dinosaur Board 104/114	1-652-3595	TRS80 Support/16 Online Adventure Games	IBM	96HSTV32	TBBS	Niwot	Chris Anderson
Dragonfriends Place 104/11	782-9547	Wicca/Astrology/Tarot/Pagan Interests	IBM	2400	Opus	Denver	Russ Anderson
Eagle's Nest 104/315	933-0701	Many Files and Echoes	IBM	9600	QuickBBS	Littleton	Ronald Olsen
Emerald City BBS 104/214	427-1471	Electronics Discount World	IBM	2400	QuickBBS	Westminster	Daniel Osborn
Enterprise	377-1005	Local Radio Freq List - Star Trek Theme	Apple	2400	Protree	Denver	Jeff Tensly
eSoft TBBS Software Support	699-9248	The Bread Board System-LOGON:ANSI DEMO	IBM	96HST	TBBS	Aurora	Phil Becker
Fantasy Mtn D-Link IV 104/803	278-8369	Deaf and Handicapped Issues ASCII TTY	IBM	2400	QuickBBS	Golden	Steve Shockley
Four Wheeling BBS, The	469-4954	Jeeping / Camping / Outdoors	Atari	2400	STadel	Broomfield	John Ferguson
Fred's BBS	233-1316	Over 1300 Adult Files	IBM	2400	QuickBBS	Lakewood	Fred Schupner
Free Information Exch. 104/89	699-1516	Programming - Home and Garden	IBM	2400	Opus	Denver	Charles Frnka
Free Thought BBS 104/423	695-0654	Amiga, Pascal - Ebert Personal Computers	IBM	2400	TBBS	Aurora	Bill Williams
Front Range BBS 104/213	466-2296	Objectivism/Libertarian-IBM/Amiga Files	IBM	96HST	QuickBBS	Broomfield	Gary Jones
Front Range PC Users Group BBS	1-493-4094	Front Range Software Services	IBM	2400	QuickBBS	Westminster	
FutureWave BBS 104/57	440-7425	Fort Collins Group - Computer Express	IBM	2400	Wildcat	Fort Collins	Tom Oppenheimer
Galaxy Express 999 104/215	469-3221	Games / C Language / MIDI	IBM	2400	Opus	Boulder	Bruce Arnold
Gay Community Fido 104/19	795-1215	Japanese Cartoon Animation-Messages	IBM	2400	QuickBBS	Broomfield	Withheld by Request
GDP Technologies BBS	673-9470	Messages / Downloads for Homosexuals	IBM	1200	QuickBBS	Littleton	Tom Gettys
Grotto, The	694-9050	Outstanding IBM Shareware/Programming	IBM	2400	Wildcat	Lafayette	Vincent Veritas
HP Haven 104/312	671-5976	Tracewars/On-line Games/ 5PM-7:30 AM	IBM	96HST	TBBS	Aurora	Mark Willecke
Intelligence Connection, The	373-9581	Artificial Intelligence/Natural Language	IBM	2400	QuickBBS	Westminster	Clemith Houston
JEFFCOM BBS	273-6951	Jefferson County Public Schools	IBM	1200	QuickBBS	Golden	Ron Dries
King's Market Bookshop 104/115	665-6091	Books, Writers, On-line Adventure Games	IBM	2400	RBBS	Boulder	Jim Burt
L&L Support	420-3568	Primary GBBS Pro Software Support BBS	Apple	2400	GBBS	Arvada	Lance Taylor-Warren

Name	Phone	Description	Computer	Modem	Software	City	Sysop
Lakewood Department of Safety	987-7388	Police Sponsored - Law Enforcement Msgs	IBM	1200	RBBS	Wheatridge	Larry Scheideman
LaserWriting Desktop Service	741-4122	Laser Printing/Scanning/Linotronic 300	MAC	1200	RedRyder	Denver	Bill Wright
Lensman, The	979-8953	Science Fiction/Fantasy Fandom News/Info	IBM	2400	GT Power	Littleton	Greg Bradt
LES-COM-net	526-2046	Lesley College Comm Net - GBBS Multiline	Apple	2400	GBBS	Genesee	George Willett
Lodge, The 104/212	420-0305	Arvada Quick BBS Board	IBM	2400	QuickBBS	Arvada	Harold "Monty" Montrose
MACE 104/416	797-8090	MS-DOS User Group - Many Files/Echoes	IBM	2400	QuickBBS	Denver	Kevin Payne
Med-Link Colorado 104/444	499-1022	Medical Files and Information	IBM	2400	Opus	Boulder	Ron Kuseski
MICRO	752-2943	Mile High Computer Resource Organization	IBM	2400	QuickBBS	Westminster	Jim Kochmann
Microlink B 104/108	972-9600	1 Gigabyte Files - USA Today - Multiline	IBM	96HSTV32	TBBS	Littleton	Girard Westerberg
Microlink D 104/711	237-8575	Over 200 MB - Doesn't Break	IBM	96HST	TBBS	Lakewood	???
Microlink Minus Two 104/204	753-9710	Professional Comp. Sales Inc.//Astronomy	IBM	2400	TBBS	Denver	Paul Smith
Midrash 104/18	289-6864	Messianic Judaism - Religious/Philosophy	IBM	96HST	QuickBBS	Denver	Danial Segard
Mile High BBS	733-1340	Triathalons - Race Schedules - Fitness	IBM	2400	RBBS	Denver	Bill Ankele
Mile High Mac Meet	758-9159	Denver Macintosh Users Group	MAC	96HST	WWIV	Denver	Jon Taylor
Mile High Net	671-7308	Fido Board	IBM	2400	Fido	Aurora	Dave Miller
Monkey Boy BBS 104/43	469-7161	Smileware Software	IBM	2400	Opus	Broomfield	Todd Hill
Mountain Man TI	797-6783	Denver TI Users Group - Texas Instrument	TI	2400	Tigger	Littleton	Roy Bartee
NBS Automated Computer Time	494-4775	ACTS - Sync PC Clock to NBS Atomic Clock	Custom	1200	Custom	Boulder	Natl. Bureau of Standards
NetComm BBS	790-8349	Weather - Online Games - 110 MB	IBM	2400	GT Power	Littleton	Bill Watts
New Age Bulletin Board, The	366-1106	Health, Ecology, Philosophy	IBM	1200	TBBS	Aurora	Hal/Fran Piser
NightFlyer 104/210	467-9199	Basic/dBase/Assembler/C Programming	IBM	2400	QuickBBS	Arvada	Marcel Madonna
Ninth Portal, The	690-5001	SciFi/Fantasy Starship Exploration Game	Amiga	2400	Atredes	Boulder	Rick Henderson
OKY BBS 104/113	494-0533	Armenian Electronics Consultant	IBM	2400	QuickBBS	Estes Park	Onrig Kouyoumdjian
On-Line Consulting 104/45	449-5251	Consultant Directory/Desktop Publishing	IBM	2400	Opus	Boulder	Lee Lasson
On-Line Shopping Service	442-5125	Boulder Home Grocery Delivery $5 +5%	IBM	1200	Chairman	Englewood	Pete Dempsey
PCIS 104/904	789-4610	PC Info Services - List of User Groups	IBM	2400	Opus	Broomfield	Phil Kaiser
Pentax Support	460-1637	CD WORM/Flatbed Scanner/Fanfold Laser	IBM	2400	Opus	Boulder	Chris Anderson
Pinecliffe 104/28	444-7073	170 Meg - Online Order for CDB Systems	IBM	96HST	Opus	Littleton	Craig Baker
Priority Business Sys. 104/41	771-8107	PC Magazine/Tech Journal Files	IBM	2400	TBBS	Littleton	John Bilbro
Professional System, The	740-2223	Writers, Lawyers, EDP Auditors	IBM	1200	Opus	????	Bob Voorhees
Quick Epicenter Determination	279-6374	USGS Earthquake Data 7E2	VAX	300 7E2	????	Denver	Bruce Presgrave
R.A.B.I.T.	757-9509	Colorado Highway Department - Planning	IBM	1200	TBBS	Denver	Colorado Dept. Highways
Ready Room, The 104/424	329-8136	Star Trek Theme - USS Tutakai NCC-1799-B	IBM	2400	QuickBBS	Wheatridge	Jason Steck
Realtime Control & Forth Board	278-0364	Vesta Technology/Denver Forth Int. Group	IBM	2400	PCBoard	Littleton	Jack Woehr
Regency Datasource 104/58	972-1222	Private Computer Consulting Support	IBM	96Hayes	Opus	Parker	Charlie Bass
Rocky Mtn Info Exch 104/739	841-9570	Multiline - INFOMAT - Chat areas - Games	IBM	96HSTV32	TBBS	Englewood	Larry Kayser
Ron and Shannons BBS	978-0298	Atari Support 5.4 MB XE 130	Atari	2400	OASIS	Denver	Ron/Shannon Sellers
Short Line 104/36	778-7312	Varied Topics, Fidonet, BinkleyTerm	IBM	96HSTV32	TBBS	Littleton	Alan Applegate
SnarfQuest V 104/317	973-0625	The Tower	IBM	2400	TBBS	Englewood	Radford Walker
SnarfQuest][104/46	761-1634	The Arena On-line Games, Fantasy, AD&D	IBM	96HST	QuickBBS	Aurora	Dax Davis
Sound Doctrine BBS 104/514	680-7209	Christian BBS / Sound Doctrine Church	IBM	2400	TBBS	Boulder	Tim Williams
Space Environment Service Cntr	497-5000	NOAA Solar Flare Forecast / Advisory	IBM	1200	PBBS	Boulder	US Dept of Commerce
Space Network	494-8446	Space Exploration Information	IBM	2400	TBBS	Boulder	Tom Meyer
Steamboat Information	1-879-6741	Info on Steamboat Graphics Area	IBM	1200	QuickBBS	Steamboat Springs	???
Stonewall 104/112	499-2676	Online Games/Graphics 120 MB	IBM	96HST	TBBS	Boulder	Mike Reetz
TBBS Net 104/23	699-9248	T)he B)read B)oard S)ystem Support	IBM	2400	TBBS	Aurora	Phil Becker/eSoft Inc.
The 8th Sea 104/610	252-9235	Fidonet 104 Net Coordinator	IBM	2400	RBBS-PC	Northglenn	Rod Lamping
The Oak Tree	431-7522	A meeting/conversation place for women.	IBM	1200	Minihost	Arvada	Denise Beahm
Translations Unlimited	988-5765	Language Translation 6PM-6AM	IBM	2400	GAP	Lakewood	Jon Johnson
Trekker World	671-9051	Star Trek Fanzine	Apple	2400	GBBSPro	Denver	Robert Morgan
Vet Set, The	690-3218	Veterans Issues	IBM	2400	QuickBBS	Aurora	Alfred Petersen
Watchdesk, The 104/66	450-0822	Safety - Arson - Hazardous Material	IBM	96HST	Opus	Thornton	Emit Hurdelbrink
Weyr, The 104/211	429-2975	Good Collection of Game Software	IBM	96HST	QuickBBS	Westminster	Ken Shimko
Wizardry 104/630	670-1416	Fantastic Online Blackjack/Casino Games	IBM	96HST	QuickBBS	Evergreen	Marvin Cook
World Peace BBS 104/415	320-4822	Current Events, Politics, Religion	IBM	2400	QuickBBS	Denver	Bucky Carr

MICROLINK B

Multiline BBS (303) 972-9600

WHAT IS MICROLINK B?

Microlink B is the largest electronic Bulletin Board System (BBS) in the area, specializing in files and message services for the IBM-PC, XT, AT and compatible systems.

Microlink B has been serving the serious BBS consumer for five years with quality public domain and shareware software, as well as interesting and informative message areas covering a variety of topics.

LOTS OF FILES!

Your membership to Microlink B gives you immediate access to one of the finest and most complete software collections you'll find anywhere. There are presently over ~~60,000~~ *92,000* individual files conveniently categorized and packaged for efficient downloading to your computer.

We DO NOT provide software for the Mac, Amiga, or other non-IBM compatible computers. Why? We think it's better to put all our efforts into providing you with the absolute best software collection for your IBM-PC or compatible system.

Even though our software collection is pretty impressive the way it is, we are always working to make it even better. We are constantly adding new software and updating existing software with newer versions. With over **1,140 megabytes** of on-line file storage capacity, you'll have access to everything from games to statistical calculation packages, database programs to personal finance managers, programmer's tools to communications utilities.

MESSAGES AND E-MAIL TOO!

We don't stop with our files collection. The Microlink B message base is connected to the world via the FidoNet public amateur network. We 'echo' many of our message areas to other Fido systems in the area, across the country, and around the world. Our message areas cover a variety of interesting topics from programming and technical issues to law, from aviation to using Lotus-123 and dBase, and much more. And, yes, we do offer private E-MAIL message areas where you can leave confidential messages for other Microlink B members.

USA TODAY ON-LINE

Microlink B also offers USA Today's Decisionline, a computerized version of the popular USA Today newspaper. Decisionline is updated early every weekday morning.

TAKE A TOUR OF MICROLINK B TODAY

You can access Microlink B anytime to take a test drive. Set your communications program for 8 data bits, no parity and one stop bit (refer to instructions for your modem or communications software). Dial Microlink B at (303)-972-9600. Microlink B will ask for your full name, then guide you along the way with easy to follow menus and instructions. You'll be able to tour the system, look over our software collection, and read messages. All telephone lines connected to Microlink B operate at 1200, 2400, or 9600 baud. 9600 baud requires the use of an HST compatible modem.

BECOME A MICROLINK B MEMBER

For just $35.00 you can have full access to Microlink B for one year, or pay just $25.00 for six month access. You can register on-line with your Visa or MasterCard, you can download our mail-in registration form, or use the handy order form below.

Prices and specifications are subject to change without notice.

Registration Form **Microlink B** (303) 972-9600
P.O. Box 620247 - Littleton, Colorado 80162
YES! I want **FULL** access to **Microlink B!**

_____ One Year $35.00   _____ Six Months $25.00

_____ Check Enclosed   _____ Visa   _____ MasterCard

Credit Card # _____

Expiration Date _____

Signature _____

Name _____ Date _____

Address _____

City _____ State _____ ZIP _____

Telephone (_____) _____

Name you will use for BBS Logon:
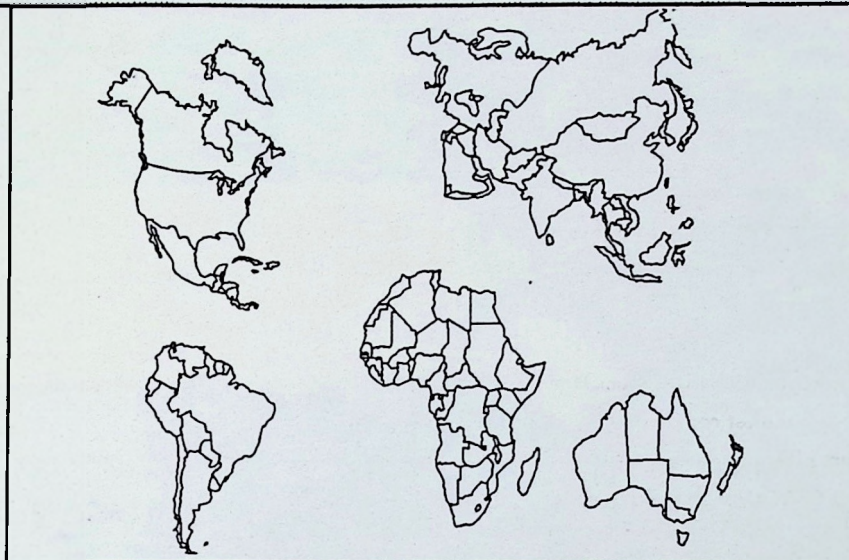
First _____ Last _____

Password _____

The File Cabinet BBS
An Interlink BBS

Why Do People The World Over Call The File Cabinet BBS?

Shouldn't You Call And Find Out?

It's hard to find a place where someone with a computer hasn't called The File Cabinet BBS. Brazil, Hong Kong. France, Italy, Germany, Nigeria, Japan, and more. People from more than 30 countries on six continents have called The File Cabinet BBS.

Why do so many people call The File Cabinet BBS from so far away? What do they know that you don't know?

Maybe it's the more than 80,000 MS-DOS files available for downloading. Maybe it's the 100 Interlink conferences that cover dozens of computer and non-computer related topics. Topics such as programming, word processing, pets, auto racing, small business, and a national buy-sell conference. Or maybe

it's because The File Cabinet BBS has so many telephone nodes that you'll never get a busy signal.

If they're calling from around the world, maybe you should call too! The File Cabinet BBS.

See for yourself why *Computer Shopper* called The File cabinet BBS the best full-service board in the United States. And why *PC Resource* named The File Cabinet BBS one of the top three boards in the country.

To call The File Cabinet BBS and see what you've been missing, set your modem for 1200, 2400, 9600, or 14.4K baud, 8 data bits, no parity, 1 stop bit. Then dial 215-678-9334. Just follow the on-screen instructions and you'll see why people from all over the world call The File Cabinet BBS.

Special Offer!

Call now to register on The File Cabinet BBS and get a 30-day trial subscription. FREE!
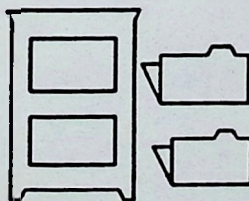
**The File Cabinet
An InterLink BBS**

215-678-9334

MasterCard
VISA

Boardwatch Magazine
5970 South Vivian Street
Littleton, CO 80127

Last Issue: December 1990
Chris Anderson
8160 Rye Court
Longmont, CO 80501

S